





Digitized by the Internet Archive  
in 2010 with funding from  
University of Toronto

The Only Weekly Mining Paper in the Union and Rhodesia.

ENGIN STORAGE

THE

Physical &  
Applied Sci.  
Serials**South African****MINING JOURNAL**

WITH WHICH IS INCORPORATED

**"The South African Mines, Commerce & Industries."**

ESTABLISHED 1891

PUBLISHED EVERY SATURDAY

VOL. XXV. PART II. No. 1286. JOHANNESBURG, TRANSVAAL, SATURDAY, MAY 20, 1916. [WEEKLY, PRICE 6D.]

P.O. Boxes 1553 &amp; 1671.

Tel. Add.: "AINSCO."

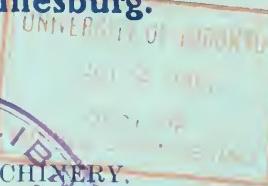
Telephones 356 &amp; 1308.

**HERBERT AINSWORTH**

304-307, The Corner House (Third Floor), Johannesburg.

SOLE AGENT FOR

**ALLIS-CHALMERS CO.'S** MINING MACHINERY.  
**GATES ROCK BREAKERS.**  
**BALL BEARING IDLERS** (FOR CONVEYORS).  
**CRANE CO.'S VALVES.**  
**GREEN'S FUEL ECONOMISERS.**  
**LAMBETH COTTON DRIVING ROPES.**  
**MANHATTAN RUBBER BELTS.**  
**KENNICOTT WATER SOFTENERS.**  
**STROMBERG CARLSON MINEAPHONES.**  
**CARBIDE, CANADIAN "S" BRAND.**



# ROBERT HUDSON & SONS, LIMITED.

P.O. Box 5744.

'Phone 1731. JOHANNESBURG. Tel. Add.: "RALETRUX."

(WORKS:—GILDERSOME FOUNDRY, Near LEEDS.)

MANUFACTURERS OF

## Tramway Material for Mines, Plantations, etc.

U-Shape  
Tip Trucks  
for  
Underground  
Use  
For Carrying  
Quartz.



V-Shape  
Tip Trucks  
and  
Side Discharge  
Trucks  
For Surface  
Work.

A. 387.—PATENT V-SHAPE DOUBLE SIDE TIP TRUCK (for Mining use).

STEEL WAGONS FOR GOLD AND DIAMOND MINES.

HOPPER WAGONS from ONE to FORTY TONS CAPACITY.

STEEL TUBS FOR COLLIERIES.

WAGONS FOR SUGAR-CANE PLANTATIONS.

SELF-OILING WHEELS AND AXLES. -- BEARINGS.

LIGHT LOCOMOTIVES.

**Steel Rails. - Accessories. - Steel Sleepers.  
Points and Crossings.**

Prices and Specifications  
on application.

Stocks held at—  
Durban, Delagoa Bay, Beira, Johannesburg, Salisbury, etc.

Rhodesian Agents:—P. PEECH & CO., Salisbury, Rhodesia.

**HEAD OFFICES: 82, 83, 84, Cullinan Building, Johannesburg.**

# WHY HOLD UP ANY OF YOUR PLANT FOR HOURS IN SPLICING BELTS?



A  
Lacing  
more  
pliant  
than  
the  
belt

The  
“CLIPPER”  
will make any  
width of belt  
endless in  
a few minutes.

“CLIPPER” BELT LACING makes an ideal hinge joint far more pliable than the belt itself. The “Clipper” hooks are made from a special steel wire, of an analysis that combines great tensile strength with rigidity and wearing qualities, capable of standing a strain of over 400 lbs. per inch on single belts, and more on double belts. These smooth, bright wire loops bearing upon the rawhide pin, make a joint not only pliable and strong, but SAFE.

The “Clipper” Lacings are so SAFE that the American Safety League has just awarded the

SAFETY GOLD MEDAL  
to the “Clipper.”

CAN OUR REPRESENTATIVE CALL AND GIVE YOU A DEMONSTRATION?

## JOHN TULLIS & SON, Ltd.

BELTING SPECIALISTS,

18, Troye Street,

## JOHANNESBURG.

Box 3524.

Phone 5903.

Rhodesian Agents: ARNOLD BROS., Salisbury.



**"INDUSTRY AS USUAL."**

LIST OF

**Manufacturers & Agents belonging to the British Empire, her Allies & Friends.****HERBERT AINSWORTH,**

Engineer and Merchant, 304-307, The Corner House, Johannesburg, South African Agent for Green's Patent Fuel Economisers, Kennicott Water Softeners, Wood's Colliery Plants and Winches, Hart's Lambeth Cotton Ropes, Canadian Carbide, "S" Brand.

**EDGAR ALLEN & CO., LIMITED,**

5, New Club Buildings, Loveday Street, Johannesburg. Miner's Drill Steel, High Speed Steel, Engineer's and Smith's Tool Steel, Tappet Key and Gib Steel, Manganese and Hard Steel Grizzly Bars, Tube Mill liner Bars, Skip Wheels, Truck Wheels and Axles, Shovels, Hammers, Shoes and Dies, etc.

**BARTLE & CO., LTD.,**

Loveday House, Johannesburg. 'Phones 3553-4. Sale Agents for Sanderson Bros. & Newbold, Ltd., Sheffield; F. Reddaway & Co., Ltd., Manchester; Henry Pooley & Son, Ltd., Birmingham; John Shaw, Ltd., Sheffield; J. W. Roberts, Ltd., Leeds; Gimson & Co., Ltd., Leicester; T. Lister & Co., Ltd., Brighouse; John Davis & Son, Ltd., Derby; Unity Safety Fuse Co., Scorrier; F. Bartle and Sons, Carn Brea; and many other well-known British Manufacturers.

**BATES, MASON & CO., LTD.,**

Machinery Merchants, Box 1895, 'Phone 2807. Government Square, Johannesburg, have large stocks of mining machinery, agricultural and building material, etc., new and second-hand, for sale cheap. Buyers of all classes of machinery and buildings for cash.

**BRITISH GENERAL ELECTRIC CO., LTD.,**

Corner Loveday and Anderson Streets, Johannesburg. Electrical Plant and Supplies of all descriptions. 'Phones 4242, 4243; Telegrams, "Current"; Box 4406. Branches at Capetown, Durban, Bulawayo, etc.

**HUBERT DAVIES & CO.,**

Electrical and Mechanical Engineers, for all kinds of Electrical Machinery and Supplies. Johannesburg, Durban, Cape-town and Salisbury (Rhodesia).

**The Denver Rock Drill & Machinery Co., Ltd.**

'Phone 1426. Box No. 2367. 1-5, Royal Chambers, Johannesburg. "WAUGH" Air Feed Hammer Drills, for all classes of mining; DENVER Brand of Rubber Conveyor Belting; Rock Drill and Water Hoses, Red Sheet Packing, Grey Insertion; "DUXBAK" Waterproof Leather Belting and Waterproof Cement; "CLARK" Air Meters. Large Stocks always on hand.

**FRASER & CHALMERS, LTD.,**

Corner House, Johannesburg; also representing Holman Bros. T. and W. Smith, Ltd.; Tangyes, Ltd.; G. and J. Weir, Ltd.; and many other British agencies.

**HADFIELDS LTD.**

(Incorporated in England).

46-47, Cullinan Buildings. 'Phone 5900, Johannesburg. Cast Steel Gyrating and Jaw Crushers and Crusher Spares, Wheels and Axles, Pedestals, Rollers, Pulleys and General Steel Castings.

**HARVEY & RUSSELL, LTD.,**

96, Frederick Street, Box 2043, Telephone 4004, Johannesburg; Power Transmission Machinery, Dewrance's Steam Fittings and White Metals, Machine Tools, "Rigby" Steam Hammers, Steel Construction Work, "Vislok" Patent Lock Nuts.

**HOSKEN & CO., WM.,**

Mining Material Merchants, Hosken's Buildings, P.O. Box 687, 'Phones 4113-9, Telegrams: "Hosken," Johannesburg. Agents for "Hydromax" New Water Hammer Drills. The fastest rock drill in the world.

**ROBERT HUDSON & SONS, LIMITED,**

Works: Gildersome Foundry, near Leeds. 83-4, Cullinan Buildings, 'Phone No. 1751. Telegraphic Address: "Raletrux." Manufacturers of all classes of Light Railway Material for Mining and Contractor use. Rails in all weights per yard, Switches and Crossings, Standard Trucks of various capacities kept in stock.

**INGERSOLL-RAND CO.,**

Exploration Building, Johannesburg. Air Compressors, Rock Drills, Hose, Steel, Pneumatic Tools, Cameron Pumps, Leyner Drill Sharpeners, Davis Calyx Coil Drills.

**PHOENIX FOUNDRY,**

Iron and Brass Founders, General Engineers and Blacksmiths. Office and Works: Hay Street, Ophirton. P.O. Box 3031, Johannesburg. 'Phone 1641. Sole Agents for Carnutyn Steel Castings Co., Glasgow. Stocks of Tappets, Skip Wheels, Heads, etc. Casting Specialities: Pipe Fittings, White Iron Pump Spares and Tube Mill Liners.

**REUNERT & LENZ, LTD.,**

Consolidated Building (3rd Floor), Johannesburg; P.O. Box 92; Telephone No. 3061. Sole Agents for North British Locomotive Co., Ltd.; Leeds Forge Co., Ltd.; Babcock and Wilcox, Ltd.; Belliss and Morcom, Ltd.; Davidson and Co., Ltd.; Frank Pearn and Co., Ltd.; "Atlas Rock Drills," John Stephens and Son, Ltd.; E. and W. Lucas, Ltd.; Sir Joseph Jonas, Colver and Co., Ltd.; John Spencer and Sons, Ltd.; and many other high-class British Manufacturers.

**SANDYCROFT LIMITED,**

Works: Chester, England. Offices, 63-64, Standard Bank Chambers, Telephone No. 360, P.O. Box No. 1976, Johannesburg. Suppliers of Stamp Battery Requisites of all descriptions, Belting, Winches, Ropes, etc.

**FATTI'S S.A. MACARONI FACTORY,**

Suppliers of Soup Macaroni to the Mines, etc. (for the Natives). This pleasing, nourishing and economical new food is much appreciated by Mine and Compound Managers, as they find in it an opportune change of the somewhat monotonous diet of the Mine Boys! Box 1139. 30-32, Jeppé Street, Johannesburg. 'Phone 962. (L. FATTI and Co., Ltd.)

**S. SYKES & CO., LTD.**

Southern Life Buildings, Johannesburg. Telephone No. 2190. P.O. Box 2303. Telegrams: "Psyche." Sole Agents for Robey & Co., Ltd., Crossley Bros., Ltd., E. R. & F. Turner, Ltd., Worthington Pump Co., Ltd., C. A. Parsons & Co., Ltd., Crompton & Co., Ltd., and Reyrolle & Co., Ltd.

**E. W. TARRY & Co., Ltd., Austral Iron Works,**

Corner of Anderson and End Streets. Box 1098. 'Phones 149 and 626, Johannesburg. Iron and Brass Founders and General Engineers. Machine Cut Gears in Raw Hide and any Metal a speciality, and in Cast Iron up to 18 feet diameter. Sole Manufacturers and Agents for Tregaskis Patent Drill Heating Furnace.

**WADE & DORMAN, LTD.,**

Box 2997; Telephone 1460, Johannesburg. Structural Steel-work of all kinds. Large Stocks of Joists, Channels, Angles, Tees, Plates, Chequered Plates, etc. Agents for British Steel Piling Co. Stockyard and Works: 217, Main Street.

**C. F. WIENAND,**

Commercial Exchange Buildings, Johannesburg; 'Phone 3, Sole Agent for Toledo Steels of all classes, Butterley Iron, Barwell's Bolts, Scott's Ropes, Mine Lubricants, Ltd., Stelasic Tyres. All highest quality.

## PROFESSIONAL DIRECTORY.

**LITTLEJOHN & WHITBY,**

ASSAYERS TO THE  
AFRICAN BANKING CORPORATION,  
NATIONAL AND NATAL BANKS.

CONSULTING ANALYTICAL  
CHEMISTS AND METALLURGISTS,

P.O. Box 849. 'Phone 1633.

Office and Laboratories:

24, SIMMONDS STREET, JOHANNESBURG.

Assays and Analyses of all Minerals, Drugs, Foods, Water,  
Milk, Oils, etc., undertaken.

Experiments conducted. Reports made as to the treatment of  
any class of Ore.

**PATENTS AND TRADE MARKS.**

**D. M. KISCH & CO.,**

(C. H. M. KISCH—A. L. SPOOR).

ESTABLISHED 1874.

Members Chartered Inst. of Patent Agents, London.

**COLONIAL AND FOREIGN PATENT AGENTS.**

The Firm undertake the Patenting of Inventions, and the  
Registration of Trade Marks throughout the world; the  
Preparation, Revision or Amendment of Specifications  
and Drawings; reporting on Validity and Infringements;  
obtaining Letters Patent, Specification and Drawings of  
Patents granted; Searches through the Patent Office  
Records; the conduct of Oppositions, and all other  
matters relating to Patents and Trade Marks.

**NO. 18 TO 19A, NATIONAL MUTUAL BUILDING,**  
CORNER OF RISSIK AND MARKET STREETS.

P.O. Box 668. TELEPHONE NO. 774.

**J. GOULDIE, C. & M.E., M.I.M.E.,**  
**CONSULTING ENGINEER.**

*Late Manager to the De Beers and other Diamond Mines,  
30 years practical experience in Diamond, Gold, Coal, and  
Metalliferous Mining in South Africa, and holder of Mine  
Manager's Certificate (First Class).*

**Mines and Mineral Propositions Inspected and  
Reported Upon.**

**Office : 62, Standard Bank Chambers, Commissioner St.,  
JOHANNESBURG.**

Phone 2225. Telegraphic Address: "Edloug, Johannesburg."

Code: Imperial Combination and A.B.C. (5th edition).

Reference: The National Bank of South Africa, Limited, here  
and in London.

**J. E. MILLS DAVIES,**

**CONSULTING MINING ENGINEER.**

180, Stock Exchange Buildings, Johannesburg.

P.O. BOX 418. TEL. ADD.: "MINING JOURNAL." TELEPHONE 918.

**W. HOLMAN JAMES, M.I.E. (S.A.)  
M. (S.A.) I.E.E.**

**CONSULTING ELECTRICAL & ELECTRO-CHEMICAL ENGINEER,**

17, 18 & 27, National Bank Buildings,

P.O. Box 5685. JOHANNESBURG. Telephone 5676.

# HOSE.

Do you realize the importance of using good Rock Drill Hose, well made  
of fresh material and properly wound?

Nowhere in the world are the conditions under which hose is used, so  
severe as on the Witwatersrand Reef, due to the abrasive qualities  
of the rock combined with altitude and climatic conditions.

We import weekly large quantities of standard sizes made to our special  
formula, insuring

**ECONOMY, DURABILITY and SATISFACTION.**

**INGERSOLL-RAND COMPANY,**

Exploration Buildings, Johannesburg.

# Engineering Works and Foundries.

ESTABLISHED 1888:

## Wright, Boag & Co.

### ENGINEERS AND FOUNDERS.

Offices : Frederick Street.

Works : Marshall's &amp; City and Suburban Townships.

Telephones :  
1056 and 1057.P.O. Box  
545.Tel. Add. :  
"SWIVEL."

JOHANNESBURG.



Austral  
Iron  
Works.

### ENGINEERS AND FOUNDERS.

Special Metal for  
wearing plates for  
Tube Mills and  
Centrifugal Pumps.

Machine Cut Gears in Raw Hide or any Metal a  
Speciality.

And in Cast Iron up to 18 feet diameter.

Sole Agents and Manufacturers of Tregaskis'  
Drill Heating Furnace.

## E. W. TARRY & Co., LTD.

Anderson and End Streets,

**JOHANNESBURG.**

'Phone 149.

Box 1098.

Tel. Add.: "Austral."

## MARTIN BUDD,

Landing, Shipping and Forwarding Agent,  
DELAGOA BAY.

P.O. Box 90.

Telegraphic Address: "BUDD."

Codes: A.B.C., A.I., Watkins & Scott's.

P.O. Box 3960.

Telephone No. 877.

## BATTEN & EDGAR

The RAND BOILER, TANK,  
:: and IRON WORKS. ::

Steel Cyanide Tanks.  
Chimneys, Cones, Skips and all Mining Plate Work  
a speciality.

Removing to new works on block of stands immediately  
at back of present works in City and Suburban.

## Britannia Engineering Co.

LIMITED.

### General and Mechanical Engineers,

IRON AND BRASS FOUNDERS,  
BOILER AND GENERAL SMITHS.

Repairs and Renewals promptly and efficiently executed.  
SOLE MAKERS OF THE HEARN PATENT PENDULUM PUMP.

201-3-5, Main Street, and 220-2-4, Fox Street,  
Box 1558. JOHANNESBURG. Phone 896.

## Standard Brass Foundry,

BENONI,

PHONE 187.

### Brass Founders and Finishers.

Castings in Gun Metal, Phosphor Bronze, Naval, Silica  
and Manganese Bronze up to 50 cwt.

Aluminium Castings for all purposes.

Makers of the well known ACID RESISTING METAL for all  
Pump parts. We guarantee this metal to be superior to any  
imported.

SUPPORT LOCAL INDUSTRIES.

WORKS AND OFFICES:

CRANBOURNE AVENUE, BENONI.

BOX  
1476.

**THOS. JESSON,  
BROKER AND MACHINERY MERCHANT,**

PHONE  
958.

HOLDS LARGE STOCKS of R.S. JOISTS, RIVETS, FIRE-BARS, 74 cwt. RIGBY STEAM HAMMER, C.I. COLUMNS,  
MACHINE TOOLS, &c. ENGINEERS' enquiries invited for ALL  
Lines of Machinery.

Corner MARSHALL and LOVEDAY Streets, Johannesburg.

**G. A. WATSON,** EXPERT COMMERCIAL PHOTOGRAPHER,  
17, Hosken's Buildings, Cor. Rissik & Fox Streets,  
Box 667, JOHANNESBURG.

Photographs of all the Leading Mines on the Rand, Enlargements a Speciality. Our Framing Department has all the latest Mouldings. Machinery a Speciality.

## NOTICE: To Mine Managers & Others

M. CHADWICK & CO., Scrap Metal and Rubber Buyers, are prepared to pay highest prices for Copper, Brass, Lead, Zinc, Cast Iron, or metal of any description. Lead, Zinc, White Metal in Ingots always on hand for sale at lowest prices. Write, send, or Telephone 5072, Box 2700, 55, Sauer Street. Prompt attention guaranteed. Distance no object.

**WANTED.**—Antimony Ores; state price, percentages, analysis, quantities can deliver monthly and points of delivery. Address Manufacturer, Station C, New York, U.S.A.

## PLEASE NOTE.

We are the Largest Buyers of  
**SCRAP RUBBER**

In South Africa.

Enquiries solicited to our Johannesburg Buyers—

JOHANNESBURG VULCANIZING WORKS,  
C/o Loveday & Anderson Streets, Johannesburg.

Or direct to us—

**CAPE RUBBER WORKS,**  
65, Shortmarket Street, CAPE TOWN.  
Box 785, Cape Town.

**WANTED.**—Antimony Mine; state location, character and quantity of ores and full particulars. Address Manufacturer, Station C, New York, U.S.A.

## KNOXITE ANTIFRICTION METALS.

Manufactured on the spot from Virgin Metals  
in grades for ALL PURPOSES.

For Bearings of Turbines, CRUSHERS, TUBE-MILLS, CAM SHAFTS, Skips, Trucks, Internal Combustion Engines, ELECTRICAL MOTORS, etc., etc.

We study Special and Particular Requirements and invariably satisfy!

ALEX KNOX, 246, Fox Street, Johannesburg.

Phone 3753.



## DICK'S BELTING.

No Belt Is a

### DICK'S ORIGINAL BALATA

unless stamped every few feet  
with the Trade Mark.

FACTORIES: GLASGOW, SCOTLAND.  
PASSAIC, NEW JERSEY, U.S.A.

SOLE AGENT—

**S. P. Ruthven,**  
3, WINCHESTER HOUSE,  
JOHANNESBURG.

BOX 5013.

PHONE 80.

TELEGRAMS, "BELTING."

## EXPLOSIVES

For Mining, Quarrying, Farming, Railway and Irrigation Work.  
"Permitted" Explosives for Coal Mines.

### AGENTS:

LONDON.—CAPE EXPLOSIVES WORKS, LTD., 15, St. Swithin's Lane, E.C.

TRANSVAAL.—REUNERT & LENZ, LTD Box 92, Johannesburg.

RHODESIA.—L. R. FORBES, Box 683, Bulawayo, and Box #27, Salisbury.

KIMBERLEY.—CAPE EXPLOSIVES WORKS LTD., & E. W. TARRY & CO., LTD.

AUSTRALASIA.—KIRK OBRIEN, Collins House, Collins Street, MELBOURNE.

### MANUFACTURERS of

Blasting Gelatin, Gelignite.  
Ligdyn Dynamites.  
"Cape Brand" Subsoil Dynamite  
Fuse Igniters.

Bi-Sulphate of Soda.  
Sulphuric and Nitric Acids.  
Sulphur & Sulphur Lime Solution  
Pure Glycerine.

Fuse, Detonators and Electric Blasting Accessories Stocked.  
Nitrate of Soda.

**CAPE EXPLOSIVES WORKS**  
LIMITED,  
**P.O. DYNAMITE FACTORY,**  
SOMERSET WEST, CAPE PROVINCE.

P.O. Box 2997.

Telephone No. 1460.

Telegrams: "JOISTS."

# WADE & DORMAN, LIMITED,

217. Main Street (near End Street).  
JOHANNESBURG.

## IRON AND STEEL MERCHANTS AND STRUCTURAL ENGINEERS.

Makers of all classes of Structural Steelwork for General and Mining Purposes.

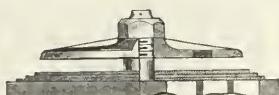
Steel Buildings, Roofs, Trestling, Bridges, Ore Bins, Steel Windows, etc.

Large Stocks of British Standard Steel Joists, Channels, Angles, etc., kept at  
Johannesburg and Durban.

Sole Agents in South Africa for the BRITISH STEEL PILING CO.

Also at South African Iron Works, DURBAN.

Telegrams: "JOISTS."



### Kinghorn Metallic Valves

FOR

**DURABILITY.**  
**EFFICIENCY.**  
**LIGHTNESS.**  
**ECONOMY.**

All Sizes Stocked Locally.

SOLE AGENTS:

GEO. CRADOCK & Co., Ltd.

618/620, Consolidated Buildings,  
JOHANNESBURG.

\*Phone 539. Tel. Add.: "ROPES." P.O. Box 316.

I.D. ESTABLISHED 1884.

THE LEADING FINANCIAL DAILY OF THE WORLD.

## The Financial News

THE FINANCIAL NEWS has the largest circulation of any financial newspaper in the World.

### ALL THE NEWS OF ALL THE MARKETS.

Items of Important Exclusive Information are given Every Day.

### THE LATEST MARKET MOVEMENTS.

All the prices recorded on the

### London Stock Exchange

Up-to-Date in all Financial Matters.  
Most News. Exclusive Articles.

### ANSWERS TO CORRESPONDENTS.

Appear Daily, with the names of the Shares About which the inquiry is made.

### ON SALE EVERYWHERE.

Publishing, Advertisement and Editorial Offices :

111, QUEEN VICTORIA STREET, LONDON, E.C.

Branch Offices : ( New York, 20, Broad Street,  
Paris, 36, bis Boulevard Haussmann.)  
TELEGRAMS—Picasso, Cent. London. TELEPHONES—6830 City  
(counts 2 words). (4 Lines).

PUBLISHED DAILY IN FRENCH IN PARIS.

# LOOK FOR THE DIAMOND TRADE MARK

It's the .....  
First Rule of  
Good Valve  
Buying .....



**Jenkins Bros.'**  
VALVES HAVE A HOST  
OF IMITATORS.

It pays to insist upon getting the genuine. Because it is only with genuine Jenkins Bros.' Valves that you are sure of the service which has given these valves their reputation.

The appearance of Jenkins Bros.' Valves can be copied, but the service goes only with the original.

It is easy for you to get the genuine.

---

RING UP - 973.  
WRITE BOX - 6096.

---

**C. WHARTON HOOD & CO., Ltd.,**  
ARE THE SOLE AGENTS.

A COMPLETE RANGE always in Stock.

Offices and Stores:  
**Maxwell Street, OPHIRTON**

# HERBERT AINSWORTH

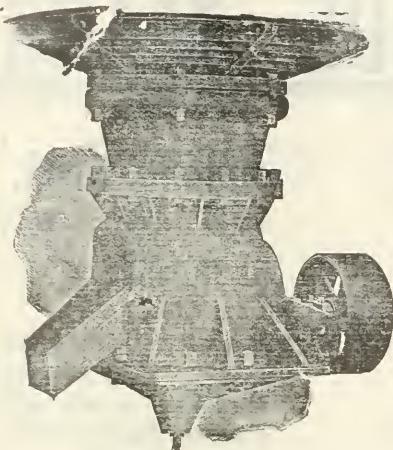
Johannesburg  
SO. AFRICA

P.O. Boxes 1553 &amp; 1671.

304-307, Corner House.

Telephones 356 &amp; 1308.

SOLE AGENT FOR



## Gates Rock and Ore Breakers

---

**Improvements Up To Date**

---

**Always Reliable**

**Advantages Over Jaw Crushers:**

**Three Times the Capacity  
Crushes Finer  
Crushes Cheaper  
No Vibration  
Requires Less Power**

Over 7,000 GATES BREAKERS are in SUCCESSFUL USE throughout the WORLD

## **"HYDROMAX"**

New Water Hammer Drills to  
supersede Reciprocating Drills.

The "Hydromax" weighs 80lbs.

Suitable for Stoping, Raising and Driving.

It drills 30% faster than any other drilling machine.

Low Air Consumption.

No Mine Manager can afford to neglect the economic  
merits of the

## **"HYDROMAX"**

The Fastest Rock Drill in the World.

We have exclusively manufactured drills for thirty-seven  
years and the "Hydromax" is our crowning effort.

**THE CLIMAX ROCK DRILL & ENGINEERING WORKS, LTD.,**

CARN BREA, CORNWALL.

WM. C. STEPHENS, Managing Director.

Agents—

**WM. HOSKEN & CO.,**  
BOX 667, JOHANNESBURG.

Phones 4113/9.

Telegrams: "HOSKEN." Johannesburg.

THE SOUTH AFRICAN  
**Mining Journal**  
 WITH WHICH IS INCORPORATED  
*South African Mines, Commerce and Industries.*  
 ESTABLISHED 1891.

VOL. XV., PART II. MAY 20, 1916. [No. 1826.]

**HEAD OFFICE:** 176-180, Stock Exchange Buildings, Fox Street (2nd Floor), Johannesburg, Union of South Africa.

Telephone 913. P.O. Boxes 963 and 418.

Cable and Telegraphic Address: "MINING JOURNAL."

**AGENTS FOR GREAT BRITAIN:** Argus South African Newspapers, Ltd., Byron House, 82-85, Fleet Street, London, E.C.

**AMERICA:** Gotham Advertising Co., 95, Liberty Street, New York.

**ANNUAL SUBSCRIPTION RATES:** Oversea, £2; Union of South Africa and Rhodesia, £1 10s.; Local Delivery (Town only), £1 6s.

Copies of this journal are obtainable at all Branches and Agencies of the Central News Agency, Ltd., at all News Agents and Railway Bookstalls throughout South Africa, and at the London Agency as above.

**NOTICE.**—The postage of this issue of the *S.A. Mining Journal* is: South Africa, 1d. All other parts, 1½d.

CONTENTS. PAGE

Notes and News ... ... ... ...	167
Topics of the Week:	
More Points about Miners' Phthisis ...	169
Phthisis Compensation Reform ...	170
A Year of Rhodesian Mining ...	170
The Future of the Far East Rand ...	171
Progress of the Barnato Mines ...	172
Map of Heidelberg District ...	173
How the Mines are Fighting Miners' Phthisis ...	174
Rand Mine Managers and Miners' Phthisis ...	175
Economic Geology and Mineral Industry of South-West Africa—VI. ...	177
Correspondence and Discussion: "Far East Contour Lines"; "The New Daggafontein Issue" ...	179
The Week in the Sharemarket ...	180
Manufactures of the Cape ...	181
Rhodesian Section:	
Latest Mining News ...	183
The Week in the Mining Material and Engineering Trades ...	183
Company Meetings: Knight Central; South African Land and Exploration Co.; Marievale Nigel; Rietkuil Gold Mines ...	ii.

## Notes and News.

The deputation of American engineers that recently visited us in regard to the Far East Rand have come and gone; and it is clear that their mission was more in the nature of a "spying out" expedition than anything else.

Naturally, however favourable their views, they cannot recommend their principals to do business until the Gold Law reforms necessary to the development of the district are carried through. Their attitude, of course, is another strong argument in favour of immediate Parliamentary action being taken in that direction. Meanwhile, we must not take too seriously the extraordinary statements of the Socialists who appear to regard themselves as the heaven-sent saviours of the Far East Rand. The patent fallacies of the State mining fetish have been too often exposed to require further reiteration at this juncture. What these people forget is that 70 per cent. of the gross production of the mines goes in wages and supplies, and that the bulk of the revenue of the country is derived from the mining industry. Fortunately these people cannot stay the progress of the Far East. The Government has lately had too many convincing proofs of the necessity for early action to be deterred by the idle vapourings and ill-disposed Socialist nostrums of the half-instructed.

\* \* \* \* \*

Giving evidence before the Miners' Phthisis Select Committee recently, Mr. W. McC. Cameron said that the only mine at which electric blasting was tried on a large scale was the Meyer and Charlton, and there a full equipment was laid down for that form of blasting. It was an ideal mine for the experiment, because it was small and compact. The experiment, however, was entirely unsuccessful, and the equipment had all been taken out again. The non-success was due first to the fact that the blasting of so many holes simultaneously injured the hanging wall to a great extent, and, second, that a man might go back to the stope, and find the whole thing had misfired, stopping his work entirely until the next blasting shift.

\* \* \* \* \*

Considerable interest has been aroused among engineers and mining men on the Rand regarding the application to rock drills of the newly-discovered method of transmitting power known as wave transmission. A description of the principles of this novel system

will not be available for publication until the formal introduction of the subject through the auspices of one of the London scientific societies. In the meantime practical developments are being pushed forward and within a few months underground trials of rock drills worked by wave transmission will be carried out on the Rand. Favourable arrangements have been made for this purpose with the Central Mining and Investment Corporation. Assuming these trials to reproduce the unique results obtained at the surface trials in London, the general adoption of the new system on the Rand should lead to an important reduction in mining costs. We understand that a company has now been registered to work the African rights. Messrs. C. L. Andersson & Co., of Meischke Buildings, are the local secretaries.

\* \* \* \* \*

In the course of his evidence before the Select Committee on Miners' Phthisis, Dr. Watkins-Pitchford and Dr. Aitken, the Medical Superintendent of the Miners' Phthisis Sanatorium, threw some interesting light on the effect of alcohol in miners' phthisis. First Dr. Watkins-Pitchford said:

"Alcoholic intemperance strongly predisposes to tuberculosis of the lungs. Alcoholic excess rapidly shortens the life of a person who has tuberculosis of the lungs. It is both a predisposing and an accelerating agent." 343. It accelerates death?"—"Yes, when taken to excess."

3415. What is its effect when taken in moderation?—"It is a most valuable drug. It has prolonged the lives of thousands of consumptives when taken in moderation." 3416. You use alcohol in the institution, I suppose?—(*Dr. Atkin*) "May I say that I have seen three deaths there which were directly attributable to alcoholic excess?" 3417. Three phthisic patients?—"Three men with classical miners' phthisis—that is, silicosis with tuberculosis. I have seen three deaths from which I could date the beginning of the man's death to a period of excess. I use alcohol in the Sanatorium as it is required. The standard amount which is given is 4 ozs. of brandy a day. When necessary, I increase that to 6 ozs. or 8 ozs., or change the brandy for champagne. But, with respect to its being a valuable drug, I might say I do not entirely depend on it; I use other things. I would like to quote Sir Thomas Fraser, Professor of Materia Medica, Edinburgh University, who said that under no condition of health or disease was alcohol a necessity, because the Pharmacopoeia offered other things which were as efficacious."

\* \* \* \*

Speaking at the annual congress of the Diggers' Union in November last, and referring to the resolution then adopted requesting the

**River Farms and Mineral Rights.** Minister of Mines to proclaim the whole of the non-proclaimed portions of the river

bed as alluvial diggings, the Secretary for Mines, Mr. War-  
ington Smyth, pointed out that in regard to this question of the proclamation of the river bed they were "on very delicate ground. They were dealing with old titles, dating back a very long period, and with people in whose cases it would be a very great hardship to suddenly take away rights which they thought they had, or had acted as if they had, for some years. Before taking final action the Government naturally had to go slowly, and hear what the views were on both sides before they took action. The intention was to go ahead with the proclamation—so far as he knew that was the present intention." From the report in the *Diamond Fields Advertiser* of the meeting of farmers in the river area, held in Kimberley on Saturday morning, it is gathered that while the Government have gone ahead with the proclamation, they have been so far from consulting—or at all events, giving weight to—the views of those affected by such proclamation, and vitally interested in the delicate questions connected with these ancient titles, that they have aroused what is undoubtedly the most determined body of feeling, in opposition to their action, that has manifested itself among the farmers of that part of the Union on any question for many a long day. The meeting, which was the most representative farmers' meeting held in that centre for many years, formed itself into a united body for the purpose of, in the first instance, defraying the expenses of a deputation to the Government, to voice the general protest. The deputation will then report to a subsequent meeting, and failing a satisfactory assurance from the Government that the interests threatened to be infringed will be protected, united action will be taken to institute proceedings against the Government for a declaration of rights.

\* \* \* \*

In the Australian *Commonwealth Gazette* of March 2, appeared the following proclamation issued by the Governor-General, Sir Ronald Munro Ferguson, and signed by the Minister for Trade and Customs, Mr. F.

G. Tudor:—

Whereas by the Customs Act, 1901-1914, it is enacted that all goods, the importation of which may be prohibited by proclamation are prohibited imports. And whereas it is desirable to prohibit the importation into the Commonwealth of Australia of explosives containing more than 50 per cent. of nitro-glycerine unless the consent, in writing, of the Minister of State for Trade and Customs has first been obtained: Now, therefore, I, Sir Ronald Crauford Munro Ferguson, the Governor-General aforesaid, acting with the advice of the Federal Executive Council, do hereby prohibit the importation into the Commonwealth of Australia of explosives containing more than 50 per cent. of nitro-glycerine unless the consent, in writing, of the Minister of State for Trade and Customs has first been obtained.

The above proclamation is in accordance with a letter sent on January 27 of this year by the British Ministry of Munitions to Nobel's Explosives Co., Glasgow. That letter, in view of the enormous quantities of explosives required by the Government for the manufacture of war material, stated among other things:—(1) The export of all blasting explosives to countries other than British colonies and possessions to cease immediately; (2) the export of all nitro-glycerine explosives to cease from January 27, 1916, until further

notice, except lignite of 50 per cent. nitro-glycerine content, and dynamite of 40 per cent. nitro-glycerine content; (3) permission to export explosives may be given on an assurance that they are to be used solely for gold, coal, copper or iron mines, or other requirements of distinctly national importance. In connection with the Commonwealth proclamation the Australian Defence Department issued a statement pointing out that the heavy demands for nitro-glycerine for war purposes made necessary the exercise of strict economy in the use of all commercial explosives containing that ingredient, and the discontinuance of the use of explosives containing more than 50 per cent. of nitro-glycerine, except where absolutely necessary. In consequence of the proclamation and the explanatory statement the mines, which have hitherto been using explosives containing about 62 per cent. of nitro-glycerine, have lately been making experiments with explosives containing only from 40 to 50 per cent.

\* \* \* \*

The report of the Transvaal Lands for the year 1915 states that the financial position again shows

**Transvaal Lands.** improvement upon the previous accounts; the cash, securities, and balances payable to the company for land sold amounted to £52,356 at the end of December, 1915, as compared with £46,500 at the end of December, 1914. The profit and loss account shows that the surplus of income over expenditure for the year amounted to £1,170, comparing with £745 in 1914 and £607 in 1913. Five farms have been sold during the past year, the company retaining one-half of the mineral rights in each case. Negotiations have been entered into for the purchase of the Farm Weltevreden, No. 58, in the Zoutpansberg District. This farm is about 2,000 morgen in extent, and should return a net annual income by way of rentals equal to about 10 per cent. on the purchase price. The investments have been added to during the year by the purchase of £8,000 4½ per cent. War Loan.

\* \* \* \*

The full report of the directors of the Standard Bank of South Africa, Ltd., for the year 1915,

**Standard Bank Prosperity.** supplementing the preliminary financial statement for the period already published, shows that the gross profits for the year amount to £982,316, these figures being some £7,000 in excess of the corresponding amount a year ago. Charges for the year, at £620,063, are slightly lower, while rebate on bills not yet due figures at £52,869 against £39,871 at the close of 1914. On the present occasion, £15,000 is set aside to bank premises account, no corresponding provision being made a year ago, while £71,000 is being allocated to writing down investments to cover the depreciation in the value at December 31 last, the corresponding contribution a year ago being £30,000. Owing partly to this larger provision for depreciation, the actual net profit for the past year, at £223,385, is some £62,000 less, but the balance brought forward from 1914, at £100,441, was almost double that brought in from the 1913 accounts, so that the directors had available £323,826, comparing with £337,234 a year ago. The dividends are again maintained at 14 per cent. per annum, representing a cash disbursement of £216,794, and, after providing £20,000 to augment the officers' pension fund, being the same amount as a year ago, the balance remaining to be carried forward to new account is £87,032 against £100,441. Comparing with a paid-up capital of £1,548,525, the reserve fund amounts to a round £2,000,000, while cash figures at £7,128,833 and investments at £4,337,058, the corresponding figures at the end of 1914 being £6,947,303 and £2,949,131 respectively. The investments, including the War Loan, have been valued at, or under, market prices as at December 31 last.

\* \* \* \*

The issue of *Truth* dated March 22nd, to hand by the last mail, contains the following:—"At a meeting in opposition to the scheme in Northern Rhodesia a speaker asked:

**De Beers Co.'s Investments.** 'Why don't the Chartered Company invest their money in this territory instead of in Austrian bonds?' This was an allusion to a report widely circulated in South Africa that just before the war the Chartered Com-

pany, and the De Beers Company also, invested very large sums in Austrian Government bonds. So far as I am aware, the report has never been contradicted. If true, it means that heavy losses will fall upon the shareholders of both companies, for Austrian bonds after the war will not be worth much." In view of this revival of a serious misrepresentation we reproduce that portion of the Chairman's speech at the last annual meeting referring more particularly to the subject of the company's foreign investments. Mr. Oats, it may be remembered, had been dealing with certain other charges against the company, which he had conclusively refuted by recapitulating the circumstances connected with the composition of the directorate, and the company's participation in the war. Continuing, he said:—

"Well, gentlemen, we have had the same thing to answer in other forms; even in our finance one has seen it referred to that we are regulating our investments—well, in a manner more considerate to the enemy than to our own country. I have got our accountant, Mr. Neville, to prepare a statement of the amount of the enemy securities we hold. The statement shows that our reserves were £1,800,000. These moneys were invested in the discretion of the directors from time to time to bear interest in as safe investments as we know, or as could be found. When those securities stood at £1,800,000, of that total the amount of enemy securities stood at £90,000, which is about 5 per cent. of the whole; these were not acquired at the time of the outbreak of the war, nor immediately preceding that time. They were acquired, in so far as £18,000 were concerned, in September, 1911, and so far as £23,000 were concerned, in October, 1911, or nearly three years before the war. The last item was in June, 1913, which was fourteen months before the outbreak of the war—and I do not think the directors knew any more about the future than anyone else. This last sum was £49,000. Altogether we had £90,687 invested in stocks in enemy countries. These have been written down to-day to about £38,000. The charge of having misused the company's money, or the shareholders' money, for the purpose of supporting our enemies, you will see from these statements, is altogether baseless. And here again I say to these people who make such charges, they do harm to our cause, and strengthen the enemy's cause by attributing to a company like this that any such motives had ever existed at all."

\* \* \* \*

The Johannesburg Consolidated Investment Company has written the following letter to the *Statist*, on the subject of the "life" of the Consolidated Langlaagte mine, from which it will be noted that the official estimate of the "life" is put at 20 years at least:—

"Our attention has been called to an article in your issue of March 18, and we have submitted the same to our Consulting Engineer, Professor J. G. Lawn, who is of opinion that your attention should be drawn to the following facts:—(1) When the estimate of ore contents was made in 1908, nothing was known of the reefs to the south of the dyke beyond the information gleaned from a couple of boreholes. Naturally, under such circumstances, the estimate was made on a very conservative basis. In 1911, when the case of Consolidated Langlaagte Mines, Ltd., v. Victoria Falls and Transvaal Power Company, Ltd., was tried, a very considerable amount of development had been accomplished south of the dyke, and the results had proved better than had been anticipated. The agreed life, viz., 22 years, was a mean between that contended for on behalf of the Consolidated Langlaagte Mines (the interest of the mining company being to make the life as long as possible) and that contended for on behalf of the Victoria Falls and Transvaal Power Company, whose interest it was that the life should be represented as short as possible. To anyone acquainted with the nature of legal proceedings it must be quite clear that the representatives of the Victoria Falls and Transvaal Power Company would never have consented to agree a life of 22 years if there had not been very substantial and adequate grounds for supposing it correct—grounds, it may be added, which would stand the test of rigid cross-questioning in the witness-box. It is rarely that the prospective life of a mine is established under such judicial circumstances. (2) When the estimate was made in 1908 full allowance was made for unpayability—indeed, a more ample allowance than subsequent development has shown to be necessary. (3) The substantial reduction in working costs which has taken place since 1908 has an important bearing upon the life of the mine, because the Consolidated Langlaagte Mines has large quantities of ore which are near the pay limit, and reduction in costs makes them payable. (4) In addition to the developments in the ground to the south of the dyke, a considerable excess of ore has been found workable in the upper levels over what was anticipated when the estimate of 1908 was made. (5) The plan given is quite misleading, as it only shows development up to about the end of 1910, when development to the south of the dyke was just commencing. This development was pushed very rapidly, and by 1914 some seven or eight levels to the south of the dyke had been driven and a large area of ground explored. You will see from the above that your method of deducting the number of tons milled since 1908 from a necessarily imperfect estimate made at that date has probably conveyed an entirely misleading impression to your readers, as, so far as a matter of fact, the life of the mine is estimated at at least 20 years; and this basis has been accepted by the Government Department for the purposes of assessing rights tax and allowing amortisation of capital expenditure."

## TOPICS OF THE WEEK.

### MORE POINTS ABOUT MINERS' PHthisis.

A CLOSER perusal of the report of the Select Committee throws further light on a number of controversial points; and it is to be hoped that there will be no undue hurry in introducing legislation purporting finally to settle them. An outstanding feature of the evidence is the lack of unanimity among the medical men concerned. After all, miners' phthisis is mainly a medical question; and where doctors differ the mere layman of course must walk warily, if he is to express opinions. It is news, for instance, to the latter that tuberculosis plays such a large part in the evil as hitherto known on the Rand. The Select Committee, at an early stage of the enquiry, even went so far as to declare that as they were asked only to deal with miners' phthisis, tuberculosis was no concern of theirs. But as the evidence accumulated in regard to the close connection between the two, and as to the medical differences as to when the one disease began and the other ended, the Committee was forced to modify that attitude. In the end, as the report printed last week showed, the tuberculosis evil had to be recognised, and no inconsiderable portion of the report is devoted to it. The fact seems to be that though tuberculosis in itself affects a relatively small number of employees on the mines, its presence, with or without silicosis, is so serious as to make it a question of grave importance. The report deals with it in the following terms:—"The medical evidence before the Committee has shown that tuberculosis is prevalent among the underground workers, both white and coloured; that the underground workings are widely contaminated by dejecta containing tubercle bacilli, and that healthy subjects, and especially silicosis subjects, are liable to become infected, the latter with particularly dangerous results. Your Committee is of opinion that it is highly necessary that measures should be immediately taken to cleanse the mines of this contamination, and that the most practical method of doing this effectually, though gradually, will be to remove all tuberculous subjects from underground. Your Committee, therefore, recommends that persons suffering from active pulmonary tuberculosis shall be compulsorily excluded from underground work, and shall receive compensation, as laid down in paragraphs 51 and 85 respectively." Most of the doctors examined were agreed about tuberculosis, though on other questions they show remarkable differences of opinion. In fact, it would seem that a great deal more research work remains to be done regarding miners' phthisis before complete agreement can be reached. The value of the X-ray diagnosis, for instance, is disputed by some authorities and stoutly upheld by others. The benefits to be derived from a central medical bureau are naturally questioned by some mine doctors wedded to the existing system; and the equity of offering compensation to natives removed from the mines because of tuberculosis is, likewise, strongly animadverted upon. Because a native is held to be refused work owing to consumptive symptoms is held to be no reason why he should be compensated as though he had acquired miners' phthisis. The argument seems a reasonable one, and it is possible that the clause of the report dealing with it may be modified accordingly. The Committee recommends that natives suffering from tuberculosis be removed from the mines and compensated as being partially incapacitated or as being totally incapacitated. The Committee recommends that such cases be compensated as laid down in section 22 of the Native Labour Regulation Act of 1911. It would be interesting to have an estimate from the mines as to the extent of the additional burden represented by that recommendation, and the burden, it should be noted, is not directly concerned with miners' phthisis at all! Regarding some of the medical questions dealt with in the report, it would therefore seem that finality has not even yet been reached. The views of the experts detailed in the evidence attached to the report certainly leave an unsettled impression. Fortunately, the Chamber of Mines people, in preparing their evidence, had the benefit

of the experience of those medical men who have been responsible for most of the study and research devoted to the subject on the Rand, and their recommendations may, therefore, safely be assumed to embody the last word in regard to the medical as well as the lay aspects of the question.

### PHTHISIS COMPENSATION REFORM.

ALTHOUGH, as we pointed out last week, the Select Committee on Miners' Phthisis found that "monthly cash payments to beneficiaries are less beneficial than the finding of employment," increased monetary grants are favoured by that body. That the weight of evidence is certainly against this recommendation of the Committee is abundantly shown in the Blue-book. Perhaps the most noteworthy testimony on the subject came from a report of the Public Relief Board, drawn up by the Superintendent of the Employment Bureau of that public body. It was published in the papers; but it has been brought up-to-date. In the course of it, the Superintendent states that since the opening of the Bureau on 8th March, 1915, until 31st December, 1915, 101 men, who had been put off from working underground on account of miners' phthisis, registered. A short epitome of each of these 101 cases is available. It will be seen that in no one of these cases has the compensation money received been used in such a way that the recipient secured for himself a good chance of being able to make or earn a living when the compensation awarded had been exhausted. In many cases the recipients merely lived on the money, and, when that was finished, applied to the Public Relief Board for help. Many only thought about looking for work, or considered what they were going to do in the future, after the last instalment had been received. Very few of these men have any knowledge of any other trade or calling than that of mining. There are so few mines in South Africa that do not come under the Phthisis Board that it may safely be considered that there is no chance of these men obtaining work underground. The only work they can hope to obtain is labourers' work. The amount of work offering for white labourers is very small, and when obtainable is generally only of a temporary nature, while the pay is such that even when sufficient to maintain the recipient and his family no margin is left to provide against periods of unemployment. When the compensation money stops, their material position is no better (and probably worse) than when they ceased work underground. In addition they have been living for two or more years on money for which they had not to do definite work; they have got out of the habit of regular work, and their ability for sustained work is impaired, if not lost for all time. They have become accustomed to live on doles, and have no hesitation in applying to others for the wherewithal to continue this mode of living. The report adds:—

Judging by the cases which have come under my notice in the course of my work during the ten months under review, I have come to the conclusion that the present method of compensating men who have contracted phthisis is more than unsatisfactory. It is doing no good whatever to the recipients, and is a source of harm to them and their children in that (a) it enables them to live without working for a period sufficiently long to destroy the habit of regular work and to impair their ability for sustained work. (b) The receiving of money for which no definite work has been done engenders a habit of applying for relief and destroys self-respect. These men apply for relief before they set about seeking for work. (c) The children become accustomed to their father not doing work and yet getting money, and being brought up in this atmosphere does not tend to instil thoughts and habits of regular work in them at a time when they are most susceptible to influences. (d) It does not tend to take the men away from the confines of the town, and to give them pure air and healthy exercise for both body and mind; these I consider essential to aid phthisis men to regain health and strength.

It will be remembered that the Chamber of Mines, in its evidence, showed that a most important point in considering the amount of compensation to be paid and the method of paying it was the extent of the real benefit obtained by the present system of money grants. The method of lump sum payments which largely prevails under the Workmen's Compensation Act, and also was prevalent at the commencement of the Miners' Phthisis Act, is generally discredited.

except in those cases where there are sound reasons for affording the individual or his dependents means to start in business. Even the present method of monthly payments is largely a short-sighted policy, since there is reliable evidence to show that in many cases the beneficiaries receiving monthly payments make little or no effort to obtain employment until these payments come to an end. So far as the dependents are concerned, the method of distributing the compensation in monthly payments is, no doubt, generally the correct one. But in regard to the beneficiaries themselves, more especially the Class "A" beneficiaries, the Chamber is convinced that the compensation paid should be utilised as far as possible in training the individual to other trades. The suggestions made by the Chamber, printed in our last issue, are based on that principle. Fortunately, it is not too late yet to hope that the wisdom of the advice tendered by the Public Relief authorities and the Chamber may be recognised by Parliament.

### A YEAR OF RHODESIAN MINING.

THE report of the Rhodesia Secretary for Mines for the year 1915, which has been laid on the table of the Legislative Council, pays a tribute to the efforts successfully made by producers in that territory to keep their mills running in face of the rise in price and scarcity of many of the most essential materials and stores, as well as the dislocation caused by the departure of many skilled workers to one or other of the various fronts. This maintenance of production is, of course, the outstanding feature in any review of the year, but we are told in addition that, notwithstanding fears which had been expressed that development work would suffer and ore reserves become dangerously depleted, "the development on the majority of the bigger mines has not suffered, and is being kept well ahead." In this connection it is interesting to note that 200,500 feet of graded footage were declared for protection purposes, a fall of only 18,400 feet as compared with 1914. "This decrease," says the Secretary for Mines, "is accounted for by the fact that extensive new development on new properties was not undertaken, and that smaller properties were brought to the producing stage as quickly as possible, when claim licences were paid, and footage for declaration purposes held over until a later date." The actual amount of development work carried out by the mines is not ascertainable, as there is nothing in the law to compel claim-owners to give any return of their work. As regards the pegging and prospecting of new ground, Mr. Montagu points out that this has suffered from existing conditions. The claims current at the end of 1915 numbered 53,187, as against 59,638 at the end of 1914. Claims are held for no less than sixteen metals and minerals, namely: Gold, chrome iron, coal, copper, tin, iron, asbestos, scheelite, nickel, antimony, tungsten, mineral salts, wolframite, mica, tantalum, and lead. By far the largest holdings are, of course, for gold. Mr. Montagu's report adds:—"It is felt by all those who are interested in and have watched the mining industry for years that we have by no means fully tested the mineral resources of the country, but to ensure a more efficient examination capital is required to carry out prospecting work on a systematic basis. . . . But what is chiefly required is the prospecting and testing of areas of the country where practically no work has been done, and to ensure this capital is necessary, the spending of which should be under careful supervision and upon work properly laid out." The returns of mineral production for the year are given in full detail in the report, and an interesting analysis shows that the twenty-eight principal producers accounted for 70·8 per cent. of the gold output. As the number of producers from gold reef claims during the year is given at 489, it is evident that 461 other producers accounted for the remaining 29·2 per cent. Many of the latter, however, could scarcely be properly termed producers, and they include over 250 who realised less than 200 ozs. apiece for the year—showing that the "small man" remains a big factor numerically, if unimportant in productivity, in Rhodesian mining.

## THE FUTURE OF THE FAR EAST RAND.

### A Fair Basis for Defining Minimum Claim Areas—The Relation Between Lessors' and Lessees' Profit—The Question of £50,000,000 Total Capital Requirement.

In our last issue we dealt with some estimates of the Government Mining Engineer relating to the minimum capital required to open up and equip a property on the Far East Rand, which would only be subject to the ordinary 10 per cent. profits tax. The figures referred to claim areas which were specified as owners' claims, and were quoted rather for their economic bearing than to support a discussion upon the question of mynepachts. Whether the Government will be prepared to give owners a larger share of the mineral rights than they already possess is of much less importance than the question of opening up the whole area on sound financial lines. In considering this problem, Mr. Kotze has—on a basis of 27s. 6d. recovery and costs at 17s. 6d. and 18s. respectively, according to depth—allowed a minimum interest of 15 per cent., and a further 3½ per cent. to provide for amortisation of the total accrued capital within a period of twenty years. In addition to this the annual profit is supposed to provide a 10 per cent. profit tax and an equal amount as representing the Government's proprietary interest, making a total of 20 per cent. In brief, after deducting the 10 per cent. profits tax paid by Rand producing mines generally, as a contribution to the revenue of the State, the company or lessee takes 90 per cent. of the balance and the Government as lessor appropriates 10 per cent. A misunderstanding appears to have arisen with respect to the recovery estimate of 27s. 6d. per ton. Some people consider it to be too high, and others too low. It is merely a basis for calculation which "may be reasonably assumed as probable" in view of all the evidence to hand. The figure has been used for the purpose of defining a claim area, and is sufficiently accurate for the purpose. In a paper read by Mr. W. G. Holford, before the Institution of Mining and Metallurgy last year, an average 25s. was assumed. This is only about 9 per cent. lower than Mr. Kotze's suggestion, and is neither here nor there when it comes to a measurement of claim areas under the conditions of the memorandum. As an off-set to this difference, there is the provision that the company concerned is supposed to receive nearly 19 per cent. on its accrued capital.

#### EXPENDITURE AND PROFIT.

Taking average depths of 3,000 and 4,000 feet, the total capital expenditure is estimated by the Government Mining Engineer at £1,151,000 in the first case, and £1,975,000 in the second. Allowing five years and seven years, respectively, for delay in bringing the properties to the producing stage the total accrued capital becomes £1,365,094 and £2,428,749. The crushing capacity provided for is 650,000 tons for the smaller concern, and 1,100,000 for the larger one. At 18s. and 17s. 6d. working cost per ton milled, according to the scale of operation, the annual gross profit for the one is £308,750, and for the other £550,000. Since profits tax is assumed to operate, a deduction of £42,835 and £73,501 is made, in accordance with the law, leaving an annual net profit as follows:—

	3,000 feet.	4,000 feet.
Gross profit	£308,750	£550,000
Amortisation deduction	42,835	73,501
	<hr/>	<hr/>
	265,915	476,499
Profits tax	26,591	47,650
	<hr/>	<hr/>
Balance	£239,324	£428,849

If an additional 10 per cent. is paid to the Government as lessors' share, there will remain:—

	£239,324	£428,949
Government's share	26,592	47,650
	<hr/>	<hr/>
Net profit	212,732	381,199
Add deduction made above	42,835	73,501
	<hr/>	<hr/>
Distributable profit	255,567	454,700
Sinking capital to amortise capital	50,803	90,388
	<hr/>	<hr/>
15 per cent. interest	£204,764	£364,312
	<hr/>	<hr/>

In the case of the 3,000 ft. property, the profit is 9s. 6d. per ton milled, or 34½ per cent. of the recovery; the Government tax plus lessor's share, it may be observed, amounts to 17½ per cent. of the gross profit, or just about half what it would be on the old Brakpan-Schapenrust lease sliding scale. Obviously the requirements of the Government, as owner, have been lowered very considerably if Mr. Kotze's suggestion is to be accepted as being in harmony with the views of the Treasury. The question to be considered, is whether a financial group would regard 15 per cent. remunerative interest as adequate for a mining proposition on the Far East Rand. *The Statist* has recently proposed 10 per cent. as being more in accordance with the requirements of the investor now-a-days, so that there appears to be a fair margin on the 27s. 6d. recovery basis. It is to be noted, however, that no provision is made by Mr. Kotze for that indefinite but important borderline of expenditure between net profit and distributable profit, which is so prominent a feature in mining company reports generally.

#### TOTAL CAPITAL REQUIRED.

It is stated in the memorandum that there will be eventually, after proclamation, some 49,200 claims available for leasing, and containing reef at a less depth than 5,000 feet. Since 5,000 feet appears to be about the limit for a workable proposition on the Far East Rand, on the figures presented, only these 49,200 claims need be considered at present as being in need of capital at some future date. At an average of only 2,500 claims each, this would represent enough ground for about 20 undertakings, and if what appears to be a liberal allowance of £2,000,000 per mine is made for capital expenditure it seems that a material deduction is possible with regard to the suggested figure of £50,000,000 for the purpose of the Far East basin. There is also to be considered the question of minimum area in this connection, since it has a very important bearing upon the problem before us. Is an average working life of 20 years enough to base estimates upon? Is a property which has spent, say, a couple of millions sterling in shafts and equipment to be closed down for want of further claim area when the shafts and plant are still good enough for a good many years' work? It seems a shocking waste of money, and a most unsound economy. If the proposed minimum areas are enlarged by, say, 50 per cent. the shafts and plant required will still be good enough for the work required of them, and the initial capital expenditure necessary will be proportionately less over the same total area.

#### Brakpan Deep.

The following information is supplied in regard to the Brakpan Mines, Limited, April output:—Stamps working, 140; running time, 26 days; ore crushed, 56,700 tons; tube mills working, 10; ore hoisted, 62,776 tons; ore from dump,

nil; waste sorted, 12·44 per cent.; fine gold declared, 21,539·38 ozs.; value declared, £90,627; equal to 31s. 11·60d. per ton milled; working costs, £56,221; equal to 19s. 9·97d. per ton milled; working profit, £34,406; equal to 12s. 1·63d. per ton milled.

## PROGRESS OF BARNATO MINES.

**Improved Development Results of the Government Areas—Closer Sorting at the Consolidated Langlaagte—Increased Profits at the Van Ryn Deep—“Knights” Augmented Reduction Plant—Slight Rise in Working Costs all Round.**

THE quarterly reports of the Barnato Group of Mines for the three months ended March 31st show the following features: At the Consolidated Langlaagte the expenditure on capital account amounted to £5,654 15s. 7d., and debenture interest to £2,406 5s. The grade of the ore milled during the quarter was about 6d. per ton higher, due to the increased amount of waste rock sorted. Working costs, however, were over 10d. per ton higher, and as, also, the tonnage milled was less by 8,300 tons than that for the preceding quarter, the gross profit showed a decrease of £7,597. The East Incline Shaft was sunk 117ft. to a total depth of 3,762ft., and the West Incline Shaft was sunk 107 feet to a total depth of 3,323 feet. Sinking in the East Incline Shaft has been temporarily stopped to permit of the cutting of the 12th level station. The development footage sampled totalled 2,470 feet, and gave the following results:—Payable, 1,130 feet, having an average value of 21·5 dwts. over 18 inches of reef. Unpayable 1,340 feet, having an average value of 5·6 dwts. over 18 inches. At the Ginsberg, the recovery value of the ore milled showed an improvement of over threepence per ton, but working costs were increased by about 2d. per ton. The quantity of ore crushed, also, was 1,055 tons less than that for the preceding quarter, and consequently the gross profit was increased only to the extent of £106. The development footage sampled totalled 385 feet, and gave the following results:—Payable, 305 feet, having an average value of 13·9 dwts. over 22 inches of reef. Unpayable, 80 feet, having an average value of 7·3 dwts. over 18 inches. At the Glencairn, compared with the previous quarter the tonnage of ore milled was less by 1,130 tons, and the recovery value showed a decrease of over 1s. 2d. per ton. The net revenue from the treatment of accumulated slime was £197 in excess of that for the preceding quarter. Working costs were about 2d. per ton higher, and the gross profit was reduced by £4,315. Of the total ore milled 45,462 tons were obtained from reclamation and other sources, and the ascertained ore reserves were depleted by 17,480 stoping tons. At the Government Areas, the expenditure on capital account amounted to £99,669 18s. 2d. Working costs during the quarter were reduced by over 8d. per ton; but the grade of the ore milled showed a decrease of about 9d. per ton, and as the amount of ore crushed was only 700 tons in excess of that milled during the preceding three months, the gross profit was less by £121. The South-East Shaft was sunk 163 feet to a total depth of 3,893 feet, and the South-West Shaft was sunk 66 feet to its final depth of 3,821 feet. The development footage sampled totalled 3,540 feet, and gave the following results: Payable, 2,110 feet, having an average value of 12·1 dwts. over 42 inches of reef. Reef only partly exposed, 550 feet, having an average value of 6·6 dwts. over 37 inches. Unpayable, 880 feet, having an average value of 5·8 dwts. over 26 inches. The payable ore reserves were increased during the quarter by 288,505 tons. Good progress has been made with the erection of the additional buildings and machinery for the extension of the reduction plant. At the New Primrose, the tonnage milled was less by 1,000 tons than that crushed during the previous three months, and the recovery value of the ore was about 6d. per ton lower. Working costs advanced by over 5d. per ton, and the gross profit showed a reduction of £3,327. The development footage sampled totalled 150 feet, and gave the following results: Payable, 110 feet, having an average value of 12·6 dwts. over 24 inches of reef. Unpayable, 40 feet, having an average value of 7·3 dwts. over 21 inches. At the New Unified, the expenditure on capital account amounted to £515 14s. 6d. The quantity of ore milled was less by 500 tons than that for the preceding quarter. Working costs were increased by about 2d. per ton, while the value of the ore crushed showed a decrease of a similar amount. Treatment of accumulated slime also realised £118 less, and as a con-

sequence the gross profit showed a reduction of £1,010 for the quarter. The development footage sampled totalled 295 feet, and gave the following results:—Payable, 255 feet, having an average value of 27·7 dwts. over 15 inches of reef. Unpayable, 40 feet, having an average value of 6·7 dwts. over 12 inches. At the Van Ryn Deep, the expenditure on capital account amounted to £8,156 13s. 3d. The value of the ore milled was about 7d. per ton less than that for the previous three months. A reduction of 3d. per ton was effected in the working costs, and the tonnage milled was increased by 6,340 tons, as a result of which the gross profit showed an increase of £3,919. The East Incline Shaft was sunk 19 feet to a total depth of 3,405 feet, and the West Incline Shaft was sunk 109 feet to a total depth of 4,171 feet. The main haulage north-east from the 7th level East Shaft, has attained a length of 1,195 feet, 157 feet being driven during the quarter. The connecting haulage from the 5th level east was advanced 246 feet, and has attained a length of 818 feet. The development footage sampled totalled 1,308 feet, and gave the following results: Payable, 1,201 feet, having an average value of 20·1 dwts. over 27 inches of reef. Unpayable, 107 feet, having an average value of 5·2 dwts. over 22 inches. At the “Knights,” the expenditure on capital account amounted to £8,111 12s. The tonnage of ore milled was increased by 1,570 tons, but the recovery value of the ore showed a decline of about 3d. per ton. Working costs were higher by nearly 5d. per ton, and the gross profit was £3,448 less than that for the preceding quarter. The Southern Incline Shaft was sunk 177 feet to a total distance of 1,927 feet. The development footage sampled totalled 1,390 feet, and gave the following results: Payable, 1,160 feet, having an average value of 11·9 dwts. over 34 inches of reef. Unpayable, 230 feet, having an average value of 8·5 dwts. over 40 inches. The new sorting and crushing plant at the Vertical Shaft is now completed and in satisfactory operation.

### Claims for Miners' Phthisis Patients.

In the House of Assembly last week, the Minister of Mines, in reply to Commandant Hamman, stated that the farm Kaapschehoop No. 43 was reserved from pegging under the Gold Law for the purpose of allowing men suffering from miners' phthisis to work claims for alluvial gold. A certain number took advantage of this, and had greatly benefited in health. In June last the reservation was withdrawn, as most of the miners had obtained work on mines in the district, the alluvial deposits not proving remunerative. The bulk of the ground was, however, still open to pegging. The result of the experiment has been that six phthisis sufferers were permanently residing there. Three married men occupied Government houses or rondavels, of which four were built for the purpose. About twelve men had so benefited by residence at Kaapschehoop that they had resumed surface work on the Rand. There had been no deaths.

### MINING INSTITUTE.

TEACHING CENTRES: JOHANNESBURG AND WITBANK.

Prof. YATES prepares candidates for the following Government Certificates:

MINE MANAGER'S. MECHANICAL ENGINEER'S.  
MINE OVERSEER'S. ELECTRICAL ENGINEER'S.

by Class, Private Tuition and Correspondence.

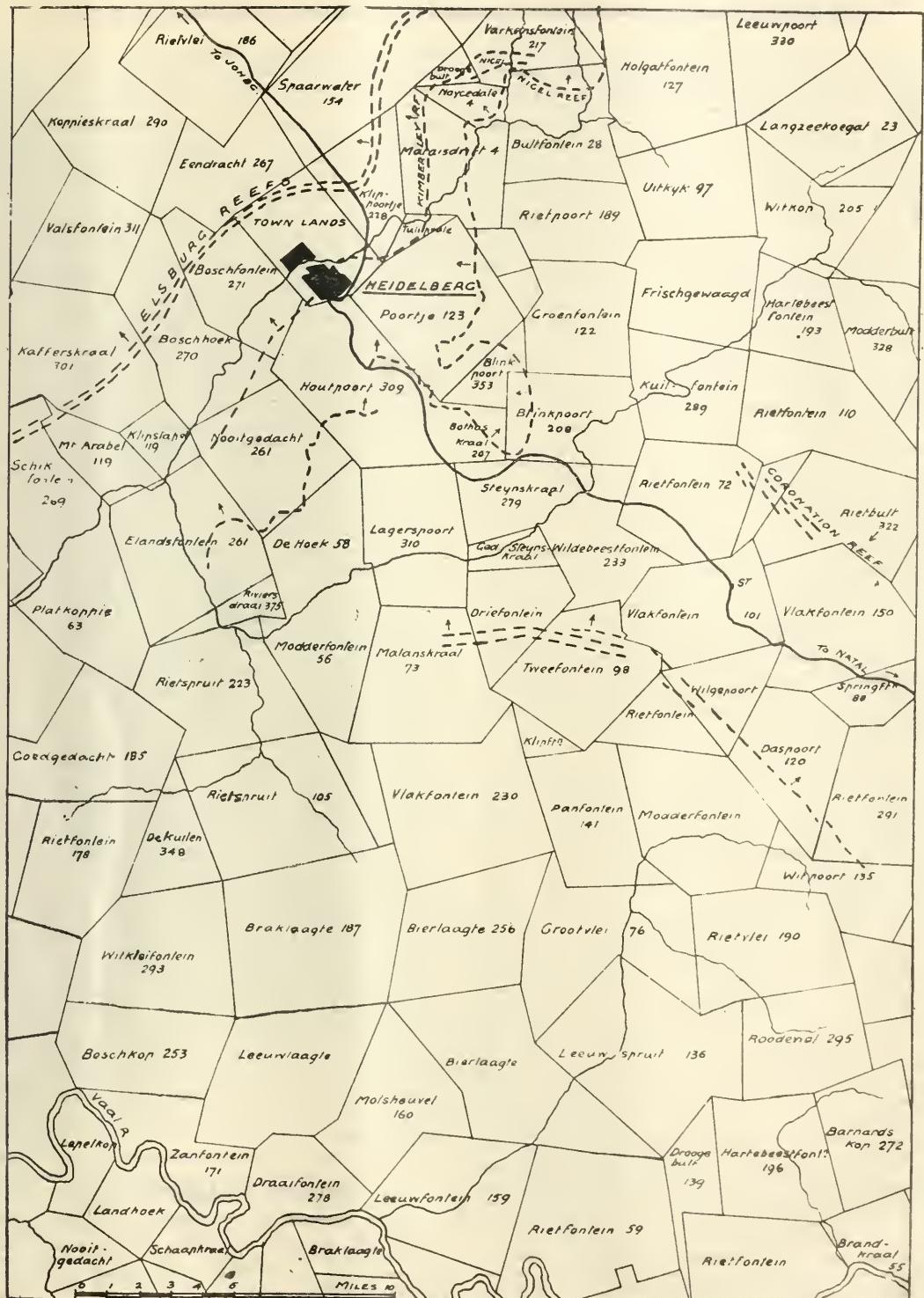
The aggregate percentage passes for the

OVER 200 SUCCESSES.

combined classes is nearly 80 %

St. James' Mansions, Eloff St.

## THE FAR SOUTH-EAST RAND.



MAP OF THE HEIDELBERG DISTRICT—AFTER DR. F. H. HATCH.

## HOW THE MINES ARE FIGHTING MINERS' PHTHISIS.

### Official Statement of the Methods Adopted on the Rand to Combat the Evil.

In the evidence given before the Miners' Phthisis Select Committee recently by the Chamber of Mines the following appears:—The first part of the statement is as follows: In regard to the question as to whether the mines scheduled under the Miners' Phthisis Act, 1912, are fully equipped with water and the necessary appliances for using it at working faces and elsewhere where dust is raised, the Chamber is of opinion that the mines of the Witwatersrand are fully equipped with water and the necessary appliances for using it at working faces and elsewhere where dust is raised. The Chamber is of opinion that the best evidence that can be given on this term of reference is that of inspectors of mines, consulting engineers and mine managers, who from their duties have actual knowledge of the conditions in the mines in this respect. The Chamber understands that various consulting engineers and mine managers will be called before the Select Committee to whom questions on this term of reference doubtless will be put, but Mr. E. H. Clifford (Consulting Engineer to the Central Mining and Investment Corporation, Ltd.) and Mr. D. Wilkinson (Consulting Engineer to Messrs. S. Neumann & Co.) are, from their wide knowledge of the mines generally, well qualified to give evidence on this subject on behalf of the gold mining industry. The question of miners' phthisis and dust prevention is one of constant enquiry by the Chamber. It is recognised that the prevention of dust is essential, and every effort is made to compel the effective carrying out of the dust-allaying regulations. With this object in view, the Miners' Phthisis Prevention Committee was established by the Government towards the close of 1911 (the cost of which is shared equally by the Government and the gold mining industry) for the purpose of investigating the underground conditions of the gold mines with a view to improving them and minimising the danger of miners' phthisis. To assist the working of that committee, consulting engineers of various gold mining groups and several mine managers are members, together with Government officials, medical men, and practical miners, with Mr. R. N. Kotze (Government Mining Engineer) as chairman. In 1912 and 1913 this committee caused a series of tests of mine air to be taken with a view to ascertaining the relative quantity of dust contained in the air of the various classes of working places in the mines. These tests were found to be of so useful a nature in ascertaining the conditions underground that, on the recommendation of the Miners' Phthisis Prevention Committee, the Chamber established a Standard Committee on Dust Sampling, with the necessary staff, to continue them. The importance of the systematic scientific testing of the air in the mines for dust is very great. It must be remembered that, except after blasting and in cases of flagrant contravention of the mining regulations, visible dust in any quantity is now but rarely met with in the mines, and, consequently, the dust problem now consists in preventing the existence of minute particles of dust, which when formed would be invisible and would offer little or no indication of their presence to the senses. This fact itself shows the extent of the improvement in mine conditions that has taken place, a comparison of the conditions existing now with those in comparatively recent years being exceedingly favourable. The invisible nature of the dust danger, as it now exists, is however, an especial difficulty, not only in fighting it but in making the parties concerned realise its presence, and the efforts of the Chamber's dust sampling staff are of the utmost utility in this respect, in drawing attention to the existence of injurious quantities of dust in unexpected places, and in the water used in dust allaying, and generally educating the parties concerned and stimulating their interest in the matter. As an example, it may be mentioned that the Chamber's dust sampling staff has recently drawn attention to a most important matter, namely, the unsuspected presence and danger of quantities of silicious particles in some of the water used in atomisers

and sprays. The Chamber has indeed recently enlarged the dust sampling staff, with the result that it will now be possible for the samplers to visit every mine at least once in every two months, and oftener in particular cases, for the purpose of testing the air and water and inspecting the dust preventing appliances. A copy of the sampler's report on each visit is forwarded to the Government Mining Engineer, the Inspector of Mines of the district, the Miners' Phthisis Prevention Committee, the consulting engineers of each group, and the manager of the mine in question, and in the event of any sample showing a bad result, or any deficiency in the dust-allaying measures being discovered by the samplers, the chairman of the company concerned is specially informed without delay. The Miners' Phthisis Prevention Committee, since the establishment of the Chamber's Standing Committee on Dust Sampling, devotes its attention to the general aspect of the question of the prevention of miners' phthisis, particularly with reference to the most efficient appliances and methods for laying dust in mines, the methods of the determination of dust in mine air, and schemes for the accurate estimation of the particles of dust in such air. As a result of its investigations, the latest views as to the best provisions for laying dust are able to be embodied from time to time in the Mines and Works Regulations. In the consideration generally of the health conditions on the mines, in the course of last year, the Chamber has elaborated a comprehensive scheme of leave privileges, by which an opportunity is given to every man employed underground to take an annual holiday ranging from two to four weeks (according to the length of service, from one to three years) on full pay. The Chamber wishes to draw attention to certain improvements which it considers have an extremely important bearing on the incidence of miners' phthisis, namely, artificial ventilation, and the system of "single shift" working. Working on "single shift" is now practically universal, and has necessitated a great increase in the ore reserves, in order to provide additional accommodation necessitated by cutting off one shift. Further, six years ago the first important ventilating fan was installed on the Rand. To-day nearly half the men are working under conditions of forced ventilation. These achievements vitally affecting health conditions on the mines have been accomplished in the face of considerable difficulties, and have entailed a very large expenditure. More recently, the Chamber decided, in order further to encourage the rigid carrying out of the dust allaying regulations and to remove any possible temptation to break those regulations, to recommend for the adoption of the gold mining companies generally a practice which in principle has been in force for some time past on several mines, namely, in cases where through no fault of the contractor concerned, work is prohibited under the dust-allaying regulations by reason of the water supply system being out of order for more than half a shift, the contractor, provided he immediately report the matter, should be paid at the rate of not less than 15s. per shift. What is known as the "flat contract" system has been abolished since June, 1915, (*i.e.*, no new contracts of this nature are being entered into since that date). In the place of the "flat contract" system, a system of day's-pay-plus-bonus or day's-pay-plus-contract is adopted generally by gold mining companies, members of the Chamber, following upon the recommendations of the Economic Commission.

### MINING EXAMINATIONS.

Study for Certificates as Mine Captains, Mine Managers, Surveyors, Mechanical and Electrical Engineers, and Engine Drivers. Private Tuition and Correspondence Lessons, where personal tuition is impracticable. Practical Mathematics and Electrotechnics. E. J. MOYNIHAN, Consulting Engineer, Cuthbert's Buildings, Corner of Ellof and Pritchard Streets, Johannesburg. 'Phone 3664.

## RAND MINE MANAGERS AND MINERS' PHTHISIS.

### Detailed Recommendations to Parliamentary Select Committee for Dealing with the Evil.

The following is from the statement laid before the recent Select Committee on Miners' Phthisis by Messrs. A. E. Payne and A. J. Brett, on behalf of the Mine Managers' Association:—

Coming more particularly to the terms of reference of the Select Committee, generally speaking, there is no question that the water service and appliances on the mines of the Witwatersrand are satisfactory and sufficient, but it is nevertheless true that as the demand for larger quantities of water grows, certain alterations become necessary. The history of the subject shows that, commencing with  $\frac{3}{4}$  in. and  $\frac{5}{8}$  in. pipes laid to supply a few isolated places in mines in 1909, the development of the water service has progressed to a stage where 1 in. is the minimum diameter of pipe allowed by the regulations and where on a large mine we find up to 60 miles of water-pipe in use, varying in size up to 6 inches in diameter. The continuous increase in the quantity of water used underground owing to the extension of the workings and the constant changes of working places naturally entail alterations to the system and certain temporary dislocations are liable to occur. Emphasis should be laid on the fact that the maintenance of the water service underground is much more difficult than would be the case on the surface, for several reasons, viz.:—(1) Owing to the dip in the majority of the mines, pipes must be broken at frequent intervals and allowed to discharge into steady head tanks in order to prevent the bursting of pipes and hoses owing to excessive pressure. (2) The daily blasting in a mine not only causes fracture of pipes by direct impact in some cases, but also, owing to the vibration set up, causes a number of leaks and dislocations in the service. (3) The main water pipes are laid in the levels along which is running a stream of trucks, which, in spite of precautions, occasionally become derailed, and in doing so may injure the water service. (4) Water pipes, sprays, etc., are often put out of action by employees, both white and black, who fail to realise the necessity for care in dealing with the water service. The use of sprays and atomisers in drives is in some cases being abandoned owing to the difficulty of keeping them constantly in order. As an alternative a system of watering down at necessary intervals of time is becoming the practice, some liquid containing a hygroscopic substance being used in places where the air current is very rapid and comparatively dry. It is quite certain that the present regulations, with possibly further slight amendments, will prove sufficient to prevent the further incidence of pure silicosis. It is essential that a good water service having been installed it should always be used, and further, that if this water service should by any chance fail, work should cease until the damage is rectified. In order to ensure white employees ceasing work if the water fails, it is usual on the mines for the company to pay contractors a wage of at least 15s. per shift, and to pay the cost of native labour for that shift if the absence of water is due to no fault of the contractor. Further, in order to standardise this practice it has recently been suggested to the Chamber of Mines that all mine managers be instructed to give effect to this suggestion. Cases frequently occur on mines where water is not properly used even when present in sufficient quantity and under sufficient pressure, and to deal with these cases managers have, under the regulations, certain disciplinary powers over white men, through the exercise of which these contraventions are rapidly becoming less frequent. Some time ago managers were deprived of the power to fine natives, with the result that offences against the Mining Regulations must be brought before an Inspector of Mines, Inspector of Native Affairs, or a Magistrate. This procedure is so cumbersome that many cases are not reported by white employees, with the result that satisfactory progress in preventing dust is not being made among natives. The Association is of opinion that the power of managers to fine natives for breaches of the Dust Regulations is of vital importance in combatting

the incidence of the disease. With regard to mine ventilation, the question has often been discussed as to whether a minimum quantity of air per man per minute ought to be circulated in each mine. The old regulations contained a clause demanding a minimum of 70 cubic feet of free air per man per minute, but this clause was deleted in favour of a test of the purity of air in the various places. It is quite clear that the total quantity of air passing through a mine is no measure of the quality of air breathed by the majority of employees. It would be easy to find cases of men working under better conditions with a smaller quantity of air carefully directed than they would do with a greater quantity of air, a large proportion of which does not reach the actual working faces. The use of artificial ventilation on the mines has made it easier to direct the current in such a way as to benefit the men, but this does not necessarily mean that the total quantity of air used has been increased. The Association is of opinion that a regulation calling for a certain quantity of air per man per minute would not only be useless in benefiting employees, but further that when complied with might lead to a false sense of security as to the underground conditions.

*Suggested Lines for Future Progress.*—The foregoing statement indicates that, in the opinion of the Association, where the regulations are strictly adhered to, the quantity of dust breathed by underground employees of sound constitution at the present day has been reduced to such an extent as to be no longer a serious menace to health. In the system of using water, further improvements will no doubt be made in the course of time, but the only further improvements to be looked for will be very slow and gradual, as steps are devised to do away with exceptional cases where any considerable quantity of dust is to be found to-day. The question will naturally be asked as to why, if the above statement is correct, there are still such a large number of applicants coming forward for relief under the Miners' Phthisis Act. Up to the present time, although the Miners' Phthisis Act of 1914, section 26, makes it an offence for any person to work underground knowing that he is suffering from tuberculosis, and also an offence for any person to employ upon underground work such a man, owing to lack of facilities, no steps have been taken properly to combat this danger to life. Dr. Watkins Pitchford, in a letter written in October, 1913, to the Miners' Phthisis Prevention Committee, stated that in his opinion it was the key to the situation, as the following extracts from his letter will show:

In an interim report, put in on the 27th February last, the danger indicated by the presence of tuberculous sputum in underground workings was referred to. I take this opportunity of again urging upon your Committee the great importance of this matter. The danger lies more in the inevitable close association of the sick and the healthy and in the ease with which the rarely-washed hands of the uninfected may become soiled with infectious sputum, than in any infection of underground air and water. The gold mining industry is one which necessarily predisposes to disease of the lungs, and is, therefore, one in which extra precautions should be taken against infection by the bacillus of consumption. It is a well-established fact that the lungs of most silicotic patients eventually become invaded by the tubercle bacillus, and it is generally recognised that the onset of the complication removes the last chance of recovery. Many underground workers must unwittingly be the subjects of silicosis in its early stages, and to diminish the chances of tuberculous infection for such workers would mean a prolongation and saving of many lives. In view of the fact that labourers who are expectorating tuberculous material are almost invariably too ill for profitable employment, and also in view of the fact that the presence of such patients in the workings is a fertile source of disease and death to their fellows, it is obviously a precaution of economy that they should not be employed. No industry can claim to be conducted on business lines which permits a few sick and disease-spreading employees to be paid full wages and to mingle unrestrictedly with their fellow-workers. The detection, and exclusion from the workings, of labourers who are expectorating tuberculous pus should, in my opinion, be one of the primary duties of mine medical officers. Such exclusions would entail, at the outset, the loss of but a very small proportion—probably not more than 2 or 3 per cent.—of labourers, and this small proportion should subsequently be rapidly reduced owing to the diminishing chances of infection amongst the healthy remainder. If the danger of tuberculosis could be overcome to

the same extent as the danger of dust, it is highly probable that a further great decrease in the number of applications for compensation will take place, and the Association is of opinion that it is therefore much more important to obtain the necessary facilities for dealing with tuberculosis than merely to continue making minor improvements in the methods of eliminating dust. The conclusion was arrived at by medical men some time ago that tuberculosis was fully as important as silicosis in endangering the health of underground employees; since then an immense improvement has been made in decreasing the quantity of dust breathed by men underground, so that the logical result of the earlier conclusions is that tuberculosis is to-day a very much more serious danger than silicosis. As instancing this point of view, the following expressions of opinion are of importance in addition to the letter which Dr. Watkins Pitchford quoted above—

(1) Dr. Aitken, medical superintendent, Transvaal Miners' Phthisis Sanatorium, expressed the view in June, 1914, that had there been no tuberculosis on these fields very little would have been heard of silicosis. "The point," he said, "is that relatively few men die of pure silicosis, and as the vast majority die of superimposed tuberculosis, it is the tuberculosis that is responsible for the hideous mortality that has brought miners' phthisis into prominence. Men die who have only a moderate amount of silicosis and who might have recovered had they not developed tuberculosis." In a report on the relation of tuberculosis and silicosis, addressed to the Chairman of the Transvaal Miners' Phthisis Sanatorium, in November, 1915, Dr. Aitken makes the further following remarks: "Therefore I say that men are perishing every day because of tuberculosis with a degree of silicosis from which, far from dying, they ought to make a relatively satisfactory recovery. If in the future men contract silicosis very slowly, and if by frequent examinations the disease is detected in an early stage, it is surely to the interest of the industry, as it certainly is to the interest of the workers, to prevent such a curable condition becoming a fatal one by reason of infection by tuberculosis. So far the industry has inaugurated two steps with this in view. It has insisted that the mine medical officers shall examine all the natives once every six months, and also that all persons seeking employment underground shall first obtain a certificate of health. To my mind there are grave faults in each of these measures. They are very excellent, but they do not go far enough. They both recognise that the infection of miners is due to the admission of infected persons, and they aim at a policy of exclusion. Most opinions agree that exclusion and sanitation are the solution to the problem. It only remains to attain the proper degree of efficiency in their application. Periodical re-examination of white miners is as necessary as it is in the case of natives. The same remarks respecting their infectivity if tuberculous apply to them as to natives. I am not aware of the existence of any regulation that will prevent a white miner from continuing to work long after he has contracted phthisis or tuberculosis, and is infecting his mates, as long as he keeps clear of the medical officer."

(2) In 1911 a Royal Commission reported on lung disease amongst miners in Queensland. They stated: "Pulmonary fibrosis is a mechanically produced disease purely local in its origin and of relatively little direct import so far as risk to life is concerned. It remains local unless or until pulmonary tuberculosis is implanted upon it. . . . The risk to life lies in infection by the organisms of tuberculosis."

(3) In 1911 a Royal Commission enquired into the subject of miners' lung diseases in Western Australia, and reported in November of that year. They stated: "The suppression of tuberculosis among miners should be the first aim of the Government and of all persons interested in the mining industry. This involves, to begin with, an unhesitating expulsion of tuberculous individuals from working in or about mines." The Commissioners, after recommending the steps to be taken, state that if tuberculosis was dealt with in the manner indicated by them, the danger arising from miners' phthisis would be unimportant. The two points then to be considered appear to the Association to be (1) What are the most efficient steps that can be taken to ascertain which of the workmen underground are affected with tuberculosis? (2) What is to be done with the men who are found to be infected with tuberculosis? With regard to (1) the Association is of the opinion that the only sound method is for all men before being allowed to work underground in a mine, and for all men who are at present at work underground, to undergo a thorough clinical and X-ray examination at a central bureau organised solely for this purpose, and that this examination should be repeated at regular intervals of, say, six months. In support of this opinion, the following views have been expressed by Eugene L. Fisk, M.D., Director of Hygiene, Life Extension Institute, New York: "Medical examination of employees at least once a year is just as necessary as the inspection of machinery, and no statistical proof is needed to support such a contention. When a disease is found that is a menace to the labour force, such a disease is always an even greater menace to the sufferer than to those around him. This principle of periodic inspection of the human mechanism which appeared so radical a few years ago has now been widely accepted as almost axiomatic. In a total of over 20,000 examinations of the employees of the International Harvester Company, of America, only 20 objected, and

most of these afterwards took the examination. Dr. Henry E. Mock reports a similar success with Gears, Roebuck & Co.'s employees and a reduction in five years of the percentage of deaths among them suffering from tuberculosis from 11 to 1 per cent. and a reduction in the percentage of tuberculosis employees from 46 per cent. to 0.8 per cent." Dr. Herman Biggs, State Health Commissioner for New York, states that, looking over the history of the last seven years to see where the emphasis should be laid in the future, he finds that the greatest need is early diagnosis of the disease (tuberculosis). It should be detected and efforts against it begun while it is still in the curable stage and before others have been injured. Another great need is after care for arrested cases. He is eager for labour colonies, believing that most of these people could be self-supporting if they could continue to keep out of doors and have healthful work. (Tuberculosis work in New York State. Extract from the Survey, 20/3/15.)

The Royal Commission on Tuberculosis for West Australia put forward the following recommendations (1) That within three months of the coming into force of the revised Act every person employed in or about a mine be examined medically and be given a medical certificate stating (if such be the fact) that so far as can be diagnosed he is free from tuberculosis. (2) That a similar medical examination be held every six months of all mine employees. (3) That all persons found to be suffering from tuberculosis be rigorously excluded from the mines and mine works. (4) And that (as at present provided in the Act) men seeking employment in the mines for the first time must produce a medical certificate stating that they are free from tuberculosis. The Act of May, 1913, of the State of Ohio, in the case of lead workers, provides for compulsory examination of all employees monthly. With regard to question (2) the Association feels that all men found to be affected with tuberculosis must be, as soon as practicable, excluded from work on the mines. All men found at the first examination to be affected with silicosis and tuberculosis combined should be compensated. Obviously after the first examination, the only men who would be found affected with tuberculosis would be those who had only been thus affected for a short time, so that their capacity for work would not be seriously impaired. The Association is of opinion that in order to assist these men, any scheme which is adopted should be based on the principle of their employment on some open air occupation aided by the State or the industry, and not in an attempt to aid such men to set up in business on their own account, as experience has proved that a large majority are not capable of making a success of such undertakings unless under the direct control of some efficient organisation. With regard to the employment of Class "A" beneficiaries, that is those suffering from silicosis only, under the Miners' Phthisis Act, this matter has received considerable attention from the Mine Managers' Association, and progress is being made with a view to the employment of such men. On the mines it is proposed that as large a percentage as possible of the surface employees be recruited from silicotic sufferers, and it is hoped that the Government, municipalities and other employers of labour will assist in absorbing these men in the many posts where no considerable skill is required. The Chamber of Mines has also under consideration schemes for the commencing of new industries which will absorb a large number of unskilled workers. With regard to the effectiveness of the steps taken on the mines, it is felt that it is absolutely essential that fuller statistics be published by the Miners' Phthisis Board, and especially that the Board should supply the Association with a list of men who become beneficiaries under the Act in order that managers may know what men are debared from work underground. A request of this nature has on several occasions been made to the Board without result. Other points of reference to the Select Committee have not been dealt with by the Association, as it is felt that the Association is not sufficiently closely in touch with the working of the Act, after the men have left the mines, to be able to offer useful evidence thereon.

At the Royal Society recently a conference of engineering and scientific institutions was held to consider the desirability of establishing a Board of Scientific Societies to organise scientific effort in the British Empire. A Committee was appointed to give effect to the following resolutions and report to a future meeting: "This meeting considers that it is desirable to establish a Conjoint Board of Scientific Societies for the purpose of (1) promoting the co-operation of those interested in pure or applied science; (2) supplying a means by which the scientific opinion of the country may, on matters relating to science, industry and education find effective expression; (3) taking such action as may be necessary to promote the application of science to our industries and to the service of the nation; (4) discussing scientific questions in which international co-operation seems advisable.

Printing, Bookbinding, Account Books, Tracing Cloth, Tracing Paper, Drawing Paper, Ferro Prussiate, Ferro Gallic, Indian Inks, Rubber Stamps  
Stationery of all descriptions, Draughtsmen's and Surveyor's Requisites.

**C. E FOLKEY, Stationer & Printer.**

Ask for a Quotation for Stationery or Printing.

7, MARSHALL SQUARE BLDGS., opposite main entrance Stock Exchange  
TELEPHONE 2065.

**WRIGHT'S ROPES.**

## ECONOMIC GEOLOGY AND MINERAL INDUSTRY OF SOUTH-WEST AFRICA.—VI.

By DR. P. A. WAGNER.

**Power.**—Most of the companies operating in the vicinity of Luderitz Bay derive their power supply from a large electric generating station at Luderitz, which is equipped with suction-gas engines consuming Welsh anthracite. Current is transmitted at a pressure of 30,000 volts. The ordinary cost is 4d. per kilowatt-hour, but special terms showing a considerable reduction are made in the case of large consumers. All the plants south of Elisabeth Bay, and some to the north of that locality, are operated by oil engines, the fuel employed being generally American kerosene.

**Labour.**—At the time of the outbreak of the war about 500 white men and 5,000 coloured labourers were employed on the fields. Of the coloured workmen almost 2,000 were from the Cape Province; the rest were Ovambos. The Cape "boys" were paid at the rate of £3 per month and the Ovambos at the rate of 25s.

**Costs.**—The cost of production per carat in different parts of the fields naturally varies within wide limits, depending, as it does, not only on the working expenses, which are governed by the scale of operations, the depth of the deposit worked, and its situation, etc., but on the diamond-content of the "gravel." In 1913 the cost per carat ranged from 2s. 2d. at Pomona to over 35s. on some of the poorer outlying claims; and the value per carat from 5s. 3d. at Pomona to 27s. in the case of the product of Colmanskop Diamond Mines, Ltd. The costs per carat of some of the more important companies during 1912 were as follows: Koloniale Bergbau-Gesellschaft, 5s. 3d.; Diamanten Pacht-Gesellschaft, 4s. 5d.; Colmanskop Diamond Mines, Ltd., 9s. (approximately); Deutsche Diamanten-Gesellschaft, 15s. 0d.; Vereinigte Diamantminen-Gesellschaft, 15s. 0d. At Frohe Hoffnung, the southernmost locality on the fields where extensive operations have up to the present been conducted, costs were so high that gravel containing 2 carats per cubic metre could not be profitably exploited.

### THE PRINCIPAL CLAIM-HOLDINGS AND COMPANIES.

The principal claim-holders on the Luderitz Bay fields are:—(1) The Government, which (a) owns the large "Government Block" extending from 30 metres south of the Luderitz Bay-Kreitmanshoop railway, between kilometre 16 and 24, to the sea south-east of Elisabeth Bay; and (b) holds under lease the Friedrichscher Nachbar, Feindlicher Nachbar and Feld No. 757 claims to the north of the Colmanskop block, the Bismarckfeld, Grosser Kurfurst, and Rangefeld claims to the south-east of Luderitz Bay, and the Eschenthal Nord, Eschenthal Sud, and Olangfeld claims to the south-east of Elisabeth Bay, within the "Sud-Block" of the Vereinigte Diamantminen-Aktiengesellschaft. All this ground was on 14th July, 1909, leased by the German Government to the Diamanten Pacht-Gesellschaft of Berlin, which has a capital of 2,500,000 marks. The lease was due to expire on 31st March, 1924, but provision was made for an extension of ten years. Under the terms of this lease the Government received three-fourths of the net profit derived from the working of the claims, depreciation of plant and machinery being allowed for in arriving at the profit to be divided. The Diamanten Pacht-Gesellschaft, in turn, entered into a working agreement with the Koloniale Bergbau-Gesellschaft, transferring the whole of the management to that company. The arrangement was to last, in the first instance, to the end of 1919, and unless one year's notice of alteration was given was to have continued to 1924. The Koloniale Bergbau-Gesellschaft received half of the profits accruing to the Diamanten Pacht-Gesellschaft, that is, 12½ per cent. of the net profits derived from the exploitation of the claims. The Government claims during 1912 produced 158,356 carats of diamonds, valued at 4,152,758 marks, and in 1913, 119,920 carats. For the year 1914, in respect of which the German Government, in pursuance of its policy of compulsorily restricting production, had limited the output of the South-West African fields to 1,038,000 carats and a fixed limit to the sales of each company, the quota allowed to the Diamanten Pacht-Gesellschaft was 109,000 carats. By far the most important of the claim-holdings of the Government is the Government Block, which in its northern and central portions contains enormous quantities of workable gravel. The deposits in the southern portion of the block are largely covered with sand dunes, and it is doubtful whether they will repay exploitation. This block is actually the property of the Government. The remaining claims are held under a fifty years' lease from the Deutsche Kolonial-Gesellschaft fur Sudwestafrika, which owns the mineral rights over the whole of the littoral between Latitude S. 26° and the Orange River for a distance of sixty-five miles inland, this tract constituting the so-called *Sperrgebiet*. All the claim areas dealt with in the following pages, with the exception of those of the Deutsche Diamanten-Gesellschaft and the Railway claims are likewise held under a fifty years' lease from the Deutsche Kolonial-Gesellschaft. (2) The Colmanskop Diamond Mines, Ltd., which was floated in Cape Town in 1909 with a capital of £125,000. The property consists of about 10,000 acres of ground, situated six miles east of Luderitz Bay. Since its inception the company has paid 182½ per cent. in dividends. Production amounted in 1912 to 122,525 carats, valued at 22·45 marks per carat, and in 1913 to 106,878 carats. The quota assigned to the Colmanskop Diamond Mines, Ltd., for 1914 was 89,500 carats. The richer claims have by this time been worked out, and in the future the company will for its output have to depend mainly on the exploitation of deep

deposits of low-grade "gravel." (3) The Koloniale Bergbau-Gesellschaft m.b.H., which holds under lease two large blocks of ground—the so-called North and South Blocks—situated between the Colmanskop claims and the sea at Elisabeth Bay. The North and South Blocks are among the most valuable holdings on the South-West African diamond fields. During 1912 the company produced 368,867 carats, valued at 10,457,602 marks, the net working profit being 8,830,243 marks. In 1913 the production was 316,774 carats and the quota allotted to the company for 1914 was 245,000 carats. The capital of the company is only 100,500 marks, and it probably ranks as the world's biggest dividend payer. The dividend distributions for the years 1910, 1911, 1912, and 1913, respectively, were as follows: 2,400 per cent., 2,500 per cent., 3,800 per cent., and 2,500 per cent.; and this after paying the exorbitant taxes imposed by the German Government. (4) The Deutsche Diamanten Gesellschaft m.b.H., which has a capital of 2,500,000 marks. It was formed in September, 1908, to acquire the diamond rights of the Deutsche Kolonial-Gesellschaft fur Sudwestafrika. The company owns a number of claims to the north and north-west of Colmanskop and to the south-east and south of Luderitz Bay. Its most important holdings, however, are situated between Pomona and Marmora, where enormous areas were pegged off during 1909 and 1910. The claims in the neighbourhood of Bogenfels have proved especially valuable, and prospecting operations have demonstrated the existence of very extensive tracts of profitable gravel between that locality and Pomona. The production of the company amounted in 1912 to 158,153 carats, valued at 5,045,665 marks, and in 1913 to 172,100 carats. The quota allotted to it for 1914 was 118,500 carats. (5) The Pomona Diamanten-Gesellschaft.—This company was floated in May, 1912, with a capital of 3,000,000 marks, to exploit the rich deposits in the Pomona area, which to this date had been left untouched pending the settlement of a dispute as to the ownership of the diamond rights. Work was commenced in August, 1912, and up to the end of 1912 there were produced 124,412 carats, of which 112,384 carats were sold for 27,083,487½ marks, this picked up by hand. During 1913 the production amounted to 613,329 carats, of which 512,384 carats were sold for 27,083,487½ carats, this working out at 51s. 8½d. per carat. Most of these diamonds were derived from the rich deposits in the Ida Tal. There are also important accumulations of diamond-bearing gravel in the Scheibe, Anna, and Marchen valleys, by which the Ida Tal is paralleled, and in the Kaukausil Valley, situated in the northern portion of the area. The cost of production during 1913 was only about 2s. 2d. per carat, and a dividend of 175 per cent. was distributed. The quota allotted to the company for 1914 was 350,000 carats. (6) The Vereinigte Diamanten-Aktiengesellschaft in Luderitzbucht.—This company, which has a capital of 2,000,000 marks, holds under lease a number of claims to the north and south-east of Luderitz Bay, including the Schmidfeld, the Buschfeld, and the Windhukfeld, and also a very extensive block of ground lying between the southern end of the Government Block and the Pomona area. In this so-called "Sud Block" valuable deposits of gravel and cemented shingle occur on the Rohrbach and Komet claims, and very rich finds were made shortly before the war on the Reichenstein claims. The company also hopes to obtain an area of 1,294 acres on the farm Marmora, concerning the ownership of which litigation was in progress when the war broke out. Production amounted in 1912 to 33,715 carats, valued at 860,500 marks, and during 1913 to 51,478 carats, valued at 1,800,000 marks. The quota allotted to the company for 1914 was 50,000 carats. The holdings of the remaining companies are comparatively unimportant. The companies are:—(7) The Diamanten Aktien-Gesellschaft.—This company was floated in 1912 with a capital

'Phone 4673.

Box 3162.

# OSBORN'S

PATENT

# "W & S" TUBE MILL LINER

Write or 'Phone for Stock List.

SAMUEL OSBORN & CO., LTD., SHEFFIELD and JOHANNESBURG.

of 500,000 marks to acquire the claim-holdings of Weiss, De Meilon and Co., the most important of which are situated between the north and south blocks of the Koloniale Bergbau-Gesellschaft. The company also holds under lease the Emilian claims to the north of Luderitz Bay and a block near Easter Cliffs. The production from the various claims amounted in 1913 to 21,765 carats, valued at 685,000 marks. For 1914 a quota of 18,500 carats was assigned to the company. (8 and 9) The Diamanten Abbau-Gesellschaft m.b.H.—This company, in which the German South West African Diamond Investment Company, Ltd., of Capetown, is largely interested, has a capital of 60,000 marks. It holds under lease the Zillertal, Phoenix, and Carlstal claims, and has also leased the claims of the Diamant-Gesellschaft Grillental, situated to the east of Elisabeth Bay. From April to November, 1913, the company produced from its own claims 13,347 carats of diamonds, valued at about 40s. per carat. The quotas allotted to the "Abbau" and Grillental Companies respectively for 1914 were 12,500 and 6,500 carats. (10) The Luderitzbacher Bergbau-Gesellschaft m.b.H.—This company was formed in March, 1913, with a capital of 21,000 marks, to acquire five circular claims belonging to the Swakopmundner Diamant-Gesellschaft, which are situated within the "Sud Block" of the Vereinigte Diamantminen-Gesellschaft. To the end of December, 1913, there were produced 8,550 carats, valued at about 37s. 6d. per carat. The quota allotted to the company for 1914 was 7,500 carats. (11) The Neue Nautilus Gesellschaft m.b.H., which holds under lease the Nautilus claims to the northeast of Luderitz and the Sudstern claims, situated within the "Sud Block" of the Vereinigte Diamantminen-Gesellschaft. Operations on these claims appear to have been suspended long prior to the outbreak of the war. The same applies to the Cimbria claims of the Keetmanshooper Diamant-Gesellschaft, which are situated north of the Grillental claims. (13) The Railway Claim Companies.—In connection with the building by the German Government of the railway from Luderitz Bay to Aus, the Kolonial Gesellschaft für Sudwestafrika ceded to the Government the mineral and water rights over blocks of ground 8 kilometres wide and 30 kilometres deep, arranged in chess-board fashion north and south of the line, and also continuous strips of country 30 metres (98 feet) wide on either side of the railway. When diamonds were discovered in 1908 the first of the railway blocks—the Government Block previously referred to—was closed to prospectors, but no restrictions were passed in connection with strips on either side of the line. These were in consequence pegged off, and three small companies were formed to exploit the ground thus acquired. The companies are: The Bahnhofeder Diamant-Gesellschaft m.b.H.; the Bahnhofeder Abbau-Gesellschaft m.b.H.; and the Kolmanskuppe Bahnhofeder-Gesellschaft. During 1913 these three companies produced about 16,000 carats, and the respective quotas assigned to them for 1914 were 9,000, 3,000, and 3,000 carats. The Halbeschide Gesellschaft.—In accordance with the terms of an agreement between the Imperial German Government and the Deutsche Diamanten-Gesellschaft in 1910, whereby prospecting for minerals in the "Sperrgebiet" would, from and after 1st April, 1911, be reserved to a company with a capital of 600,000 marks, to be held in equal shares by the contracting parties, the Government share, 300,000 marks, was provided in supplementary estimates for 1913. The company known as the Halbeschide Gesellschaft was formed in 1914. It has for its prime object the discovery of the source of the diamonds spread over the fields.

#### THE CONCEPTION BAY DIAMOND FIELDS.

The only diamondiferous deposits north of the Schmidtfeld claims, near Luderitz, which have up to the present proved worthy of exploitation, are situated between Mroob and Conception Bay, in what are generally known as the Conception Bay Fields. The "gravel" deposits of this area are similar to those in the neighbourhood of Luderitz Bay, but are characterised by being very shallow and patchy. Five companies have claim holdings in the Conception Bay fields. They are: The Diamantfelder-Verwertungsgesellschaft Konzeptionbucht; the Kysfhauser Gewerkschaft; the Hansa Diamant-Gesellschaft; the Charlotenfelder Aktien-Gesellschaft; the Holsatia Diamant-Gesellschaft. The claims of the Diamantfelder-Verwertungsgesellschaft are worked by the Koloniale Bergbau-Gesellschaft, which undertook to spend 300,000 marks on the construction of a light railway and a pipe line to the claims, and in return receives 55 per cent. of the net profit. Hand-operated moveable-sieve jigs are employed. The production from May, 1913, to August, 1914, was at the rate of about 2,000 carats per month. The average weight of the diamonds produced is only one-twelfth carat, but the quality is excellent, and an average price of about 31s. per carat was realised. The operations of the Hansa Gesellschaft and the Kysfhauser Gekerkraft have also been attended by a fair measure of success. The quotas allotted to these two companies for 1914 were 4,000 and 6,000 carats respectively.

#### THE FUTURE OF THE SOUTH-WEST AFRICAN DIAMOND FIELDS.

Notwithstanding the fact that an enormous amount of prospecting work was carried out by the different companies prior to the outbreak of the war, no important diamondiferous deposits were discovered prior to the outbreak of the war, no important diamondiferous deposits were

discovered in the littoral of South-West Africa between 1910 and 1914. The area of the field is therefore not at all likely to be increased. With regard to the main claim-holdings, it may safely be asserted that, except perhaps in so far as the Pomona area is concerned, the cream has been skimmed; or, in other words, that the richest and most accessible areas of gravel have been worked out. The deposit in the Ida Tal at Pomona, while of phenomenal richness, are shallow and of limited extent, and they have already in great part been exhausted. As against the foregoing there can be no question that vast resources in the form of low-grade material still remain; and, though there will probably be a gradual falling off in the quality as well as in the average size of the diamonds produced as the richer deposits are exhausted and improved methods for recovering the very small stones are introduced, a long and prosperous career may confidently be predicted for the South-West African fields.

#### PRODUCTION OF DIAMONDS IN SOUTH-WEST AFRICA TO THE END OF 1913.

Year.	Carats.	Value.	Value per carat.	Average No. of stones to the carat.
1908*	38,275	£55,898	29s. 2d.	—
1909	483,266	705,629	28s. 2d.	5·0
1910	846,695	1,109,643	26s. 2d.	5·75
1911	773,308	969,065	25s. 0d.	6·5
1912	1,051,177	1,511,600	28s. 8d.	5·09
1913	1,470,000	3,084,581	41s. 11d.	4·97
Total	4,662,721	£7,436,416	—	—

Of the 1913 production there were actually sold 1,284,727 carats, valued at £2,698,500. In respect of the first seven months of 1914 no data have as yet been published. The production appears, however, to have been at the rate of about 120,000 carats per month, notwithstanding the decision of the Government to limit the sales for the year to 1,038,000 carats.

\*August to December only.

+The marked increase in the average value and size of the stones produced during 1913 was mainly due to the fact that, in this year, over 42 per cent. of the total output of the South-West African fields was derived from the Pomona claims, whereas, as already stated, the diamonds attain their maximum average weight.

(To be continued.)

## Pittsburgh Steel Company

Pittsburgh, Pennsylvania

U. S. A.



MANUFACTURERS OF

## OPEN HEARTH STEEL PRODUCTS

Wire Rods, Galvanized Wire, Bright and Annealed Wire, Varnished Wire, Galvanized Barbed Wire, Nail, Bolt and Rivet Wire, Wire Nails, Fence Staples, Fabricated Stock, Poultry and Lawn Fencing

Pig Iron, Blooms, Billets, Hard Spring Coil Wire, Twisted Cable Wire, Telephone Wire, Bale Ties, Steel Hoops, Steel Bands, Cotton Ties

We are prepared to give prompt service, and solicit your inquiries accompanied by complete specifications

ADDRESS

## PITTSBURGH STEEL COMPANY

Export Dept., Singer Building  
NEW YORK CITY, U.S.A.

Cable Address: "Pittsteel"

NEW AND UP-TO-DATE FOUNDRY will undertake to supply Castings of every description in Brass, Gun Metal, Phosphor Bronze, and Acid-resisting Metal. Duplicate Orders a speciality.

CENTRAL BRASS FOUNDRY,  
49, POLLY STREET,  
Quotations on receipt of particulars. JOHANNESBURG

**CORRESPONDENCE AND DISCUSSION.****Far East Contour Lines.**

To the Editor, *South African Mining Journal*.

Sir,—In your issue of the 22nd April last, on page 92, there appears a plan of the Far East, showing, amongst other things, what appears to be the Brakpan-Springs, and Daggafontein Reef, or the Reef running through these properties, at any rate, it would convey that idea to the average layman; but on examination of the map of "The Far East Rand," issued with the memorandum of the Government Mining Engineer, as laid before Parliament, I gather that it is the approximate locality on which the Reef will be found, at 4,000 feet deep. Might I ask you to be good enough, in your next issue, to emphasise this fact, in order to remove any misunderstanding that may have been arrived at by readers of your journal.—I am, etc.,

G.T.B.T.

Capetown.

[The line in question was distinctly described on our map as the 4,000ft. contour line, and it is not our fault if people will not inform themselves regarding its meaning. Omission to do so, is, however, very common.—Ed. *S.A.M.J.*]

**The Daggafontein Issue.**

To the Editor, *South African Mining Journal*.

Sir,—A good deal of uneasiness prevails among the old Daggafontein shareholders as to when the new shares and options attached thereto are to be distributed. The company would, I think, win the gratitude of a large number of holders by adopting this course without delay.—I am, etc.,

"DAGGA."

Benoni, May 15.

The seventh edition of "The Wiring Rules of the Institution of Electrical Engineers" has just been issued. The alterations that have been made are largely matters of detail, but the following points may be noted:—The clause relating to gas pipes is strengthened, and combined are adapted they must be entirely disconnected from the gas piping, gas and electric fittings are not to be used. If gas fittings, the test for cables has been somewhat modified. A pressure of 1,000 volts for half an hour is stipulated for 250-volt cables; but this is increased to 2,500 volts for 650-volt cables. These grades of cable are defined by the radial thickness of dielectric and the insulation resistance. The testing current is to be alternating at a frequency of 50-100, and the alternator must have an output of not less than 5 kilowatts. Some modification has been made in the specification of flexibles, and bunching in wood casing is allowed to a larger extent. As regards lead-covered conductors, these must be exposed to view; but it is not clear whether this clause covers Heyley's special system. Switches having handles projecting from an open slot in the cover are now barred. Definite distinguishing colours are recommended for positive, negative and neutral conductors, and for three-phase conductors. A clause has been introduced admitting the use of uncased conductors protected by tough rubber compound.

**PERSONAL.**

Mr. J. A. Womble, having resigned from the Geduld Proprietary Mines, is succeeded by Mr. P. M. Anderson of the Princess, who in turn will be succeeded by Mr. Smith, underground manager of the latter mine.

\* \* \* \*

During the absence of Mr. R. Pill, technical adviser to the General Mining and Finance Corporation, it is understood that Mr. G. A. Denny will act in that capacity for the western mines of the group, and Mr. Holmes will act in a similar capacity for the eastern mines of the group.

\* \* \* \*

Regret is felt by a wide circle of friends and acquaintances on the Rand at the death of Mr. Cecil Edward D'Avron, who was for long a well-known figure in mining circles here. Recently he was greatly interested in the prospects of Madagascar, and we understand that he was latterly associated with an American house which had taken up some of his concessions in the island.

\* \* \* \*

The news that Colonel C. A. Madge had been killed in action, conveyed in a cable this week to Mr. H. C. Boyd, came as a very severe shock to his many friends in Johannesburg. The announcement followed swiftly on his last letter stating that he hoped soon to be sent abroad and the tragic news of his death was the first intimation that he had left England. Colonel Madge had come to South Africa with the 11th Warwickshires as a lieutenant and retired with the rank of captain. He was engaged on repatriation work for a long time, and about the beginning of 1903 obtained his position as land manager of the Transvaal Consolidated Lands. His administration was marked by conspicuous ability and he took a wide interest in the development of the country generally. He identified himself with the Agricultural Society, and took a leading part in the affairs of the Transvaal Landowners' Association, as a member of the Executive Committee, and some time president. He assisted materially in the formation of the Land Bank, acting in a secretarial capacity to the Commission. Soon after the outbreak of war his co-operation was enlisted by Colonel Bourne, Secretary for Defence, and he took up the appointment of Director of Information on the Headquarter Staff, Pretoria. At the conclusion of the German South-West campaign, General Smuts spoke most highly of his services. The desire for further service took him to England, whither he went with very strong recommendations from the Union Government. He was confirmed in the rank of Lieutenant-Colonel and posted to the headquarter staff of one of the divisions and, as already stated, his last letters indicated that he hoped soon to be sent abroad.

**S. SYKES & Co., Ltd., Johannesburg.**  
P.O. Box 2303. Telegrams: "PSYCHE."

**Mechanical and Electrical Engineers.**

REPRESENTATIVES OF

**POWER & MINING MACHINERY CO., N.Y.**  
**GYRATORY & JAW CRUSHERS FOR ANY CAPACITY.**  
**ALL KINDS OF MINING MACHINERY.**

Rhodesian Branches: BULAWAYO and SALISBURY.

## THE WEEK IN THE SHAREMARKET.

## Continued Dulness—Rise in Modders.

The market continues inactive, actual transactions on High Change one morning being limited to twelve stocks. The outstanding feature has been the advance in the Modder trio. A parcel of New Modders changed hands at £17 5s. sixty days buyer's option, which being a time bargain, was not officially recorded. At one time Modder Bs. got a good start of their Deep rival, but the latter subsequently pulled up nearly level. African Farms have shown no improvement on last week's price. Bantjes flattered their backers by a brief rise, from which they speedily relapsed. Brakpans and City Deeps have held their own. City and Suburbans show an improving tendency. Main Reefs are practically unchanged. Consolidated Langlaagtes continue firm. East Rands reappear a weak feature, though some buying ex London would lead to the supposition that certain buyers hope for an advance. Ferreira Deeps are still being offered down without attracting purchasers. Knight Centrals show no signs of improvement. Geduld Props and Government Areas remain at last week's level. Kleinfonteins received a bit of a shaking on Thursday. Pretoria Cements show no change. Raufonteins have been a trifle harder. Springs Mines receded somewhat—whether the fact of the option shares being issued on Friday has anything to do with their fall is hard to say. Coal Trusts continue on the weak side. Van Ryn Deeps show a substantial advance and Knights seem also to be an improving factor. Tins, with the exception of Swazies, continue as weak as ever. In the lower priced stocks Glynn's Lydenburg and Sub Nigels have fully justified their early supporters. Small goods of every description are for the present out of it as gambling counters. Notwithstanding the limitation of business prices of all first class stocks must be deemed satisfactory with the few exceptions which have been noted. In the unlisted stocks, some business is always being done in Daggafonteins new and old and options, but somewhat below week's rates. Hendersons show no signs of improvement and the first sellers ex London, who have now delivered their goods, have no cause of complaint.

The market hardened on Friday morning with considerable demand for the favourites. City Deeps made 77s. 6d., closing sellers at the price. Buyers of City and Suburbans offered 36s. 9d., but 37s. was wanted. Gedulds improved to 44s. 6d.; Government Areas to 34s. 6d. Modder Bs. which were picked up at advanced rates the moment the market opened, realised £6 15s. 6d. cash at the call and £6 17s. 6d., sixty days buyer's option. Deeps were bid to £6 13s. 6d., with £6 14s. 6d. sellers. Kleinfonteins weakened still further to 28s. 9d.; Crown Mines fetched 54s.; Portland Cements 70s.; an improved bid of 27s. 6d. was made for Swazi Tins; Springs and Van Ryn Deeps were unchanged and a sale of Coal Trusts was booked at 66s. 6d.

Fri., Sat., Mon., Tues., Wed., Thurs.,  
12th. 13th. 15th. 16th. 17th. 18th.

African Farms ...	10 0*	10 2	10 1	10 0*	10 2*	10 1*
Apex Mines ...	6 1	6 3*	6 0*	6 3	5 10*	5 9*
Aurora Wests ...	—	—	—	11 0*	11 0*	11 0*
Bantjes Consolidated	14 1	14 9*	14 5	14 9	14 4*	13 9
Blauwboch Diamonds	—	—	—	47 6*	—	—
Brakpan Mines ...	75 0	75 0*	74 6*	76 6	76 3*	77 0
Dreyten Collieries ...	—	—	—	20 0*	20 0*	—
Briek and Potteries	5 0*	5 0*	—	5 0	—	—
British South Africa ...	—	—	10 6*	10 6*	10 6*	—
Bushveld Tins ...	—	—	—	0 6*	0 6*	0 6*
Cinderella Cons. ...	6 9*	6 6*	—	—	6 6*	6 9*
City and Suburbans ...	35 0*	35 6*	35 0*	36 0	36 0*	36 6
City Deeps ...	75 0*	75 6	74 9*	76 0	75 9*	76 3
Cloverfield Mines ...	9 0	9 3	9 0*	9 2*	9 4	9 2
Clydesdale Collieries ...	—	14 0*	14 6*	—	14 0*	12 0
Concrete Construction	1 6*	1 6*	1 6*	1 6*	1 6*	—
Cone Langlaagtes ...	33 9*	34 3*	34 0*	34 0*	34 6	35 0*
Cons. Main Reefs ...	19 9	19 9*	19 9*	19 9	19 9*	19 6
Cons. Mines Selection	18 0*	18 1*	18 0*	17 0*	18 0*	17 0*
Coronation Freeholds	0 4*	0 4*	0 4*	0 4*	0 4*	0 4*
Coronation Syndicates	—	—	2 0*	2 0*	2 0*	2 0*
Crown Diamonds ...	2 0*	—	2 0*	1 9*	2 0*	2 6*

a Odd lots. \* Buyers. † Sellers.

	Fri., 12th.	Sat., 13th.	Mon., 15th.	Tues., 16th.	Wed., 17th.	Thurs., 18th.
Crown Mines ...	52 6*	52 6*	52 6*	52 6*	52 6*	52 6*
East Rand Centrals	8 2	8 1*	8 1*	8 1*	8 1*	8 1*
East Rand Coals ...	3 7*	3 7	3 7*	3 7	3 7*	3 7*
East Rand Deeps ...	—	1 6*	1 6	1 6*	1 7	1 6*
East Rand Mining Estates ...	—	15 9*	—	—	15 6*	18 0†
East Rand Props ...	13 6	13 0*	13 0	13 6*	14 3*	13 6
East Rand Debentures	£78*	£78*	£78*	£78*	£78*	£78*
Eastern Gold Mines ...	—	1 6*	1 6*	1 7*	1 9*	1 8*
Ferreira Deeps ...	31 6†	31 0†	—	—	31 6†	31 0†
Frank Smith Diamonds	2 5	2 5*	2 4*	2 3*	2 4*	2 3*
Geduld Props ...	43 0*	43 6	43 0	44 0	43 6*	—
General Minings ...	—	—	—	—	—	10 0†
Glencairns ...	—	2 6†	1 9*	1 9*	—	1 6*
Glencoe Collieries ...	7 0*	—	6 6*	6 6*	6 6*	6 6*
Glynn's Lydenburgs ...	15 0†	14 6	—	14 6*	16 0*	17 0†
Goerz & Co. ...	—	13 0*	—	—	—	—
Government Areas ...	33 6*	33 9	33 6	34 0	33 9*	33 6*
Klerksdorp Props.	1 9*	1 9*	1 9*	1 9*	1 9*	1 9*
Knight Centrals ...	12 9	12 6	12 8	13 3	13 0*	12 6*
Knights Deeps ...	—	—	—	—	—	21 0*
Lace Props.	6 9*	6 9	6 10*	6 9*	6 9*	6 6*
Langlaagte Estates ...	—	—	—	—	17 0†	—
Leeuwpoort Tins ...	16 3	16 0	16 0*	16 9	16 9*	16 0*
Luipaardsvlei Estates	8 0†	7 0*	—	7 0*	7 0*	7 0*
Lydenburg Farms ...	8 0*	8 4*	8 0*	8 3*	8 1*	8 0*
Main Reef Wests ...	7 1	6 9*	7 0	7 0*	6 9*	6 10*
Meyer and Charltons ...	—	—	—	107 6*	107 6*	107 6*
Middelveld Estates	1 2*	—	1 2*	1 2*	—	1 0*
Modderfontein B.	127 0*	128 6	128 6	129 0	132 6	132 0*
Modder Deep Levels	128 0†	127 6*	126 6	128 0*	129 6*	132 0*
Natal Navigation Colls.	16 6*	16 6*	16 6*	16 6*	16 6*	16 6*
National Banks ...	—	—	—	220 0*	220 0*	220 0*
New Boksburgs ...	2 0†	—	2 0†	2 0†	1 9*	1 2*
New Eland Diamonds	19 0†	—	19 0†	—	—	—
New Era Cons. ...	8 10†	8 3*	8 3*	8 3*	—	8 0
New Geduld Deeps	5 8	5 8	5 7*	5 7*	5 7*	5 7
New Herions ...	54 0†	54 0†	54 0†	54 0†	54 0†	54 0†
New Kleinfonteins ...	30 9	30 9	30 3*	30 6	30 3	29 9
New Modderfonteins ...	330 0*	332 6*	331 3*	332 6*	345 0*	340 0†
New Rietfonteins ...	—	0 8*	0 8*	0 8*	0 8*	0 8*
New Unifields ...	11 6*	12 6*	12 0*	11 6*	—	13 0†
Pretoria Cements ...	70 0†	70 0†	70 0†	69 6†	67 6*	68 0*
Princess Estates ...	3 0†	3 0†	2 0*	3 0†	2 0†	3 0†
Rand Collieries ...	3 3*	3 3*	3 3*	3 3*	3 3*	3 3*
Rand Klips ...	8 6	8 5	8 4*	8 5	8 4*	8 3*
Rand Nucleus ...	2 1*	2 0*	2 0*	2 0*	2 1*	2 0*
Randfontein Deeps ...	4 0*	4 0*	4 0*	4 1*	4 3†	4 0
Randfontein Estates ...	—	—	—	12 9*	13 0*	13 3*
Robinson Deeps ...	—	21 0†	—	—	21 0†	21 0†
Rooiberg Minerals ...	13 6	13 3*	—	13 6	13 9	13 6*
Roodopeart Uniteds ...	7 6*	7 6*	7 6*	7 6*	7 6*	7 6*
Rose Deeps ...	—	29 0*	—	30 0*	—	—
Ryan Nigels ...	—	—	2 6*	—	—	—
Shibas ...	2 0*	2 0*	2 0*	2 0*	2 0*	2 0*
Sinner Deeps ...	1 6*	1 8*	—	1 10*	2 0*	2 0*
S.A. Breweries ...	—	—	—	—	23 0*	23 0*
S.A. Lands ...	6 2	6 5	6 3	6 2	6 2	5 9
Springs Mines ...	54 6	54 9	54 0	55 0	55 6*	55 6
Sub Nigels ...	14 10*	16 0	15 6	17 3	16 6	16 10*
Swaziland Tins ...	—	25 0*	25 0*	25 0*	26 3*	26 6*
Transvaal and Delagoa ...	—	42 0*	—	42 0*	42 0*	—
Transvaal Coal Trust ...	67 6	65 6	65 0	66 0	66 9*	66 6*
Transvaal Lands ...	14 6*	15 0	14 6*	15 3†	15 3†	15 3†
Transvaal G.M. Estates ...	21 6*	21 0*	21 6*	21 6*	21 9*	—
Tudors ...	—	1 6†	—	—	—	—
Van Ryn Deeps ...	66 0	66 6*	66 6*	67 9	68 9	70 0
Village Deeps ...	—	33 0†	30 0*	33 0†	—	—
Village Main Reefs ...	17 6*	20 0†	17 6*	—	—	—
Vogel, Cons. Deeps	1 6*	1 8*	1 8*	1 8*	1 8*	1 8*
Welgedachts ...	23 0†	23 6†	23 6†	—	21 0*	23 6†
Western Rand Estates ...	2 0†	2 0†	—	—	—	—
Witwatersrand Deeps ...	54 6*	54 6*	54 6*	56 0	55 6*	56 0*
Witwatersrand Tins ...	23 6*	—	24 0*	23 9*	23 9*	24 0*
Wolhasters ...	9 3	9 3*	9 0*	9 3*	9 6	9 4 1*
Zaalplaats Tins ...	11 0*	10 6*	10 6*	10 9	10 6*	10 6*

## New Heriot.

The directors of the New Heriot have declared a dividend of 35 per cent., payable to shareholders registered on the 31st of May.

The strength of Tanganyikas is attributed in London to the important purchase of the Anaconda Company. It is thought the American representatives now in South Africa may inspect it with a view to developing copper interests.

## MANUFACTURES OF THE CAPE.

### How the Peninsula has Benefited from Local Industries—Advantages as a Producing Centre.

The Capetown Chamber of Commerce has issued an interesting booklet on the "Manufacturing Industries of Capetown and the Western Province," the object of which is to give information of the wide variety of goods manufactured in Capetown and its immediate hinterland. In the course of an introductory chapter it is stated:—

Attention has been called in two recent publications to the manufacturing industries of the Union as a whole. There are special reasons why these should be supplemented with particulars of Capetown and Western Province manufacturing industry. Capetown, together with its immediate hinterland, is the largest manufacturing centre in South Africa; its products go furthest afield; and not only throughout the Union, but to such territories as British East Africa, Portuguese West and East Africa, Northern Rhodesia, and the Congo. The effects of the disorganisation Overseas are being experienced in those regions as well. And, as continuous developments in their trade after the war are certain, the benefits to our manufacturers through seizing the present opportunities seem likely to be in increasing ratio, as time goes on, and not merely of a temporary character. The mercantile community welcomes the establishment of and favours due encouragement to every form of manufacturing industry which can be regarded as natural to the country, (a) obtaining from it the main portion of its raw materials, etc., or (b) rendering services of such an indispensable kind as calls for its establishment in the community. Fortunately, the main portion of Capetown industries and those of the Western Province are of that class. Whatever the views of the commercial community, as a body and individually, may be on the subject of Protection, they realise, of course, that the establishment and growth of manufacturing industry is part of the economic evolution of every progressive country; and that stable conditions are necessary to it. Further, they appreciate to the full the beneficial influence on the commerce, property market, and business generally of Capetown, resulting from the operations of so many industries in its midst and in its vicinity and the appreciable part in the development of the place its factories have played and are playing.

#### GREAT DEVELOPMENTS.

The motive of this booklet is "business" pure and simple in the wider sense of the term. At the same time in view of its origin, the publication must necessarily be regarded as implying a tribute of the part of the mercantile section of the community to the enterprise, energy, and achievements of the manufacturing section. Manufacturing industry can be aided and encouraged by methods whose legitimacy is not a subject of controversy. The commercial community and organisations officially representing it, fully recognise that co-operation on their part in such cases is claimable on the score of the common weal. A secondary object of this publication, one which will be more fully pursued in a subsequent one, is to draw attention to the unique advantages Capetown and Western Province offer as a manufacturing centre. It is obvious that there are great developments in store for manufacturing enterprise in this country. And in view of the beneficial influence referred to, the commercial community of Capetown desire that Capetown with the Western Province should secure as considerable a share of such enterprise as the advantages it offers entitles it to. It is not the aim to attract additional factories in lines of goods whose manufacture is already sufficiently established here, but rather to add to the variety of manufactures carried on. The influence of the factory on the economic side of Capetown's life has spread to the social side, due in great part to the large numbers of youths, girls and women—and not a few of older growth—who are employed. For instance, where formerly only the head persons of a family was in employment, to-day it is a common thing to find all the young people employed at factories, especially the feminine portion. The increase in the wages thus earned by the family is leading to a higher standard of living—in food, dress, furniture, recreation, etc. Incidentally it has benefited the building trade and the boarding-house business; because, where wages and salaries increase, the sharing of houses and the letting of rooms tends to diminish.

#### MANUFACTURING BROUGHT INTO PROMINENCE.

The war has brought local manufacturing industry into prominence from several points of view. That industry has assisted the country in making up deficiencies in imports in various directions and has come to the rescue of various trades as well as other industries, which found themselves cut off from their usual supplies. An interesting instance is that of flowers of sulphur, largely used for dipping and spraying. Owing to the war, export from the United Kingdom and other countries is prohibited. This has been replaced by ground sulphur, from the local explosives works. Had it not been for the enterprise of that concern in taking up that branch of manufacture, South African farmers would to-day be unable to obtain sulphur unless perhaps at ruinous rates. That factory is to-day the sole available source of supply for this country. Notwithstanding this, and the extraordinary circumstances prevailing in consequence of the

war, the enormous increase in orders for sulphur has been met at prices very little above pre-war rates. The same concern has in the same way come to the help of certain manufacturing industries, such as mineral waters, tanneries, etc., which found their supplies of sulphuric acid cut off. This acid is also largely used by farmers in the fumigation of fruit trees. Still more remarkable is the fact that the same industry came to the help of the Australian mining industry when, owing to the prohibition of export from the United Kingdom, it was cut off from its usual United Kingdom supplies. An export of some £16,000 per annum mounted in 1915 to a rate of something like £70,000 to £80,000 per annum.

#### READJUSTMENT OF CONDITIONS.

The part thus played by Peninsula industry in the readjustment of conditions in the Empire necessitated through the war, must be regarded as all the more gratifying in that service has thereby been rendered to the great common cause. The local bag and sack factory not only provided the Colonial Military Authorities with some hundreds of thousands of those goods in connection with the operations in South Africa at a time when the import was seriously interfered with, but assisted several industries which were seriously handicapped by the shortage. One industry in particular, of some considerable importance, was practically saved from closing down. The sheet metal industry, again, came to the rescue of the electrical apparatus trade by manufacturing such items as cells, brass caps, etc., when the import of these stopped. In some lines local industry has prevented a rise in prices, which the disorganisation of Overseas trade would otherwise have brought about, or at least mitigated it. It enabled the capture of ex-German S.W. Africa to be effected considerably earlier than would have been the case had reliance been necessary on Overseas sources alone for equipment and supplies. Very large sums of money were expended by Government through Capetown and Western Province industrial channels which must otherwise have gone elsewhere. To some extent this stimulus may be regarded as of more than temporary effect, owing to the strengthened position in which not a few of the factories concerned have been left. That money has exerted a beneficial influence of local trade; it has provided a considerable amount of employment and assisted in tiding over the community for the greater part of the first year of the war period.

#### IN THE INTERESTS OF THE EMPIRE.

Further, in a general way, the circumstances of this war have compelled attention to the importance, in the interests of the Imperial Commonwealth, of each component of the Empire developing its industrial and commercial resources to the utmost, within, of course, the bounds of the economically salutary. Within less than a decade our manufacturing industries, like those of the rest of the country generally, have become considerably wider in their scope, more firmly established, more modern in method, and a growing spirit of confidence, ambition and determination is manifest among the manufacturing body. A striking feature is the establishment here of branches or subsidiary companies of world-wide concerns, including soap, candle, tobacco factories, and such concerns as an explosive works, with equipment equal to the best in the world, and with technical and administrative staffs of high attainments. Such factories are most valuable as examples, for the benefit of local industrialism, of high standards in efficiency, in treatment of employees, in the conduct of factory operations constituting neither nuisance nor eye-sore. Another striking feature is the importance, number and variety of the factories operating in the Western Province. In any publications of the Chamber referring to the advantages offered by Capetown and the Western Province for manufacturing activities, the object, as already indicated, is not to attract further enterprise in lines already sufficiently represented, but rather to induce the manufacture of new lines of goods to which this centre may be suited.

#### INFLUENCE ON AGRICULTURE.

In previous publications of the Chamber, the manner in which the mercantile community of Capetown co-operates with the farming industry of its hinterland has been referred to. The manufacturing industries, also, exert no slight beneficial influence on the agricultural industry of that hinterland. Indirectly, of course, such an influence is exercised by providing a larger population of workers to consume the products of the soil. Directly we have a number of factories using those products as their raw materials, and thereby stimulating their larger production; while in most cases the management exercise their influence in the direction of the use of improved types and methods, etc. For instance: Mills where wheat, oats, barley and maize are manufactured into flour, meal, breakfast and other foods; tobacco factories, using locally-grown leaf and popularising its use; jam factories, using every kind of locally-grown fruit; confectionery, biscuits and cake factories, using locally-grown barley, the cultivation of malting varieties of which has been considerably stimulated; baconing types of fruit; wine, brandy, vinegar and grape syrup industries, types of pigs; margarine factory, using fats of local production; dried fruit industry, which is encouraging the growing of special drying types of fruit; wine, brandy, vinegar and grape syrup industries. With regard to the stimulating of farming in other parts of the

country by Capetown and Western Province factories, we have such examples as the tanning industry, which obtains its hides from all over the country and uses Natal bark; jam and confectionery, which uses Natal sugar and, in part, butter from the Orange Free State and Eastern Districts of the Cape; milling, using maize from other parts of the Union; woollen factory, which draws its supplies from the pastoral districts of the Union; tobacco manufacturing, which buys from other parts of the Cape, Transvaal and Rhodesia; soap factory, using Colonial tallow from various parts. The creation of a meat export trade and the cultivation on a large scale of such oil-bearing products as the soya bean, cotton (seed), ground-nuts, etc., will mean supplies of tallow and animal and vegetable oils on a more commercial scale than at present for use in Capetown's soap and candle industries. The Forestry Department, it is understood, looking into the future, is providing for the requirements in the matter of wood of the match industry. The case of leather is rather one of obvious opportunity than of immediate urgency at the moment. At the rate, however, at which the output of our tanneries has of late been increasing, the country's main demands ought soon to be overtaken. Our production of hides and skins is already large. In 1913 (last normal year) the export was nearly £6,000,000 lb. of hides and of sheep and goat skins, valued at over £2,000,000. This is bound to increase very largely with the development of the meat export trade which is springing up. Within a few years, in the absence of set-back to our pastoral industry—including the great ranches of Rhodesia and ex-German South-West Africa—the surplus supply after our local needs have been satisfied, may well be doubled. Assuming that South Africa tanners could convert for export one-third of that amount, it would mean an export worth some £3,000,000 a year, spelling a very great increase in our tanning operations, a decrease in cost of production and of local cost, and more than doubling the value per lb. of the article exported by turning it into leather. It is certain that that figure will not be reached for a considerable time to come. But it is a worthy ambition to hold in view.

### New Heriot.

The particulars of last month's operations at the New Heriot are as follows:—Ore milled, 13,500 tons; gold recovered, 5,590 ozs.; profit, £8,410.

The report of the directors of the New Heriot for the quarter ended March 31 shows that expenditure amounted to £43,984 9s. 10d., and the revenue to £70,208 13s. 2d., leaving a profit of £26,224 3s. 4d. The footage driven, sunk etc., was 340 feet. Towards the end of February and in March the ground driven in was found much disturbed, and, in consequence of the reef being broken, the values should be disregarded; moreover, the small amount driven has no material bearing on the mine values. April development shows that the ground has become more settled. Rock hauled: Main Reef, 9,771 tons; Main Reef Leader, 15,354 tons; South Reef, 26,568 tons; total, 51,603 tons; of which 41,100 tons were milled, and 10,493 tons dumped as waste. The mill (60 stamps) ran 86'709 days; duty per stamp per day, 7,900 tons; yield in bar gold, 11,211·468 fine ozs.; yield per ton milled, 5·456 fine dwts.; sands treated, 28,050 tons; gold recovered, 4,459·421 fine ozs.; yield per ton treated, 3·180 fine dwts.; slimes treated, 13,399 tons; gold recovered, 1,202·174 fine ozs.; yield per ton treated, 1·734 fine dwts. The yield from the mill was 11,211·468 ozs., equal to 5·476 dwts. per ton milled; the yield from sands was 4,459·421 ozs.; equal to 2·170 dwts. per ton; and the yield from slimes was 1,202·174 ozs., equal to 0·585 dwt.; total, 16,873·063 ozs.; total dwts. per ton milled, 8·211.

A recent meeting of the central executive of the Employers' Parliamentary Association in London discussed the question of the debts owing by alien enemies to British firms, and adopted a resolution reiterating the view that, in respect of simple trade debts, the Government should at once devise machinery whereby, on cessation of hostilities, the British Government should be in a position to investigate all claims of British traders, and, if satisfied as to their validity, discharge the debt, full opportunity being given to the alien enemy to contest the claim in the British Courts; the British Government being fully indemnified by the enemy Governments on behalf of the sums so expended. A letter was addressed to the Board of Trade, pointing out the increasing probability of widespread bankruptcy in enemy countries after the termination of the war, and the consequent probability that a large proportion of such debts will be irrecoverable, and urging that, since it is believed that in the great majority of cases these debts will be largely, if not entirely included in excess profits, justice might best be met by the purchase by the Treasury of all such debts incurred within six months before the outbreak of war, and which can be certified by a chartered accountant as included at their full value in the accounts of the company as on August 4, 1914, and subject to any required indemnity respecting their liability. The concentration of all such debts in the hands of the Government would simplify their collection at the close of hostilities.

### EFFECTS OF AN EXPORT TRADE.

This export movement, promising, as it does, very much larger developments in the future, is especially healthy, from the economic point of view, in the case of a debtor country like South Africa, into which so much capital from Overseas has been poured in the past, and which has, particularly in the matter of articles of food and drink, failed in production. (1) It is a distinct symptom that the country is at last making a commencement in earnest with the task of supplying its own requirements in various lines where it ought obviously to be able to do so. (2) It widens enormously the possibilities of expansion for the industries concerned, by thus bringing them beyond the limits set by local demand alone. (3) By increasing the scale of production, the cost is reduced, so that an export trade in manufactured goods should tend to lower living-cost here. (4) Being brought in touch with the great Overseas markets with their exacting and uncompromising requirements must tend to heighten the standard to which our manufacturers and producers work. Not only is this very desirable in itself, but in conjunction with the increased scale of production, it must assist our manufacturers in extending their market in this country. (5) Such exports help to advertise the country's resources, the openings it offers for manufacturing, the enterprise of its inhabitants, and thereby to attract the investment of capital. (6) Such a trade means that consumers in other countries are paying wages and salaries of Capetown and the Western Province workers and increasing their number; are paying a proportion of the cost of building factories, etc., here; are thus contributing towards increasing the values of our property market; are paying a share of the electric power, electric light and water rates; are assisting in enabling municipal schemes of improvements to be carried through; are increasing farming production from our hinterland—the trade done by local merchants and storekeepers. (7) It means that further additions are being made to outward-going cargo, the comparative lack of which in the past is the main argument in justification of the admittedly high rates of shipping freight to and from South African ports.

At the date of the conquest of German South-West Africa the following railways were in existence: The Otavi Railway, extending from Swakopmund to Tsuneb, with branches from Onguati to Karibib, and Otavi to Grootfontein, 2ft. gauge, 421 miles; the State (Northern) Railways, extending from Swakopmund, via Jakalswater to Karibib and Windhuk, 121 miles narrow gauge, 11 $\frac{1}{2}$  miles 3ft. 6in. gauge—240 miles; the North and South Railway, extending from Windhuk to Keetmanshoop, 3ft. 6in. gauge, 317 miles; the Southern Railways, extending from Luderitzbucht to Keetmanshoop, with a branch line from Seehiem to Kalkfontein, 3ft. 6in. gauge, 340 $\frac{1}{2}$  miles; total mileage, 1,318 $\frac{1}{2}$  miles. The foregoing do not include the following privately owned lines: Kolmanskop to Bogenfels, via Pomona (narrow gauge), 90 $\frac{1}{2}$  miles; Rehoboth Station to Riebeekborth Town (narrow gauge), 3 miles; Arandis Station on Otavi Line to Khan Mine (narrow gauge), 12 miles; Karibib to Marble Quarries (narrow gauge), 15 miles. There were constructed for military purposes during the war: From Walvis to Swakopmund, 3ft. 6in. gauge, 23 miles; conversion of line from narrow gauge to 3ft. 6in. gauge. Swakopmund to Usakos, 100 miles; avoiding line from Usakos to Karibib, 3ft. 6in. gauge, 20 miles; Upington (South) to Kalkfontein, 3ft. 6in. gauge, 172 miles. Total of privately-owned and military constructed lines, 314 $\frac{1}{2}$  miles. These railways were so designed and constructed as to be likely to be useful for commercial purposes after the war. On the instructions of the Government the Railway Administration took over these railways as forming part of the railway system as from August 1, 1915, subject to the military authority still obtaining in the South-West Protectorate, leaving for future settlement the question of the amount, if any, to be added to the railway capital account. The Commissioners are of opinion that these railways, for some years at least, will prove unremunerative without taking into account interest on capital, and consider that the lines should be worked for, on behalf of, and at the cost of the Defence Department until a complete settlement is come to as to the terms upon which they are to be incorporated in the South African Railway System.

### FOR SALE.

**ICE PLANT.** Capable of producing about 4 tons per day in 80 cwt. moulds. The whole in first-class condition, as good as new. Part cash, balance terms. This is going a bargain, in time to be erected for next season.

Apply—P.O. Box 1622, Johannesburg.

## Rhodesian Section.

### LATEST RHODESIAN MINING NEWS.

#### Falcon Mines Difficulties Being Gradually Overcome—Tati Gold and Silver Returns. Chicago-Gaika Development.

The directors of Falcon Mines, Ltd., in their report to June 30, 1915, state that during the year 1,366 ft. of development work were carried out, mainly at the 7th level, with the result that an additional 196,943 tons were added to the ore reserves. The opening up of the mine below the 7th level is now undertaken, and according to the last advice received the ore body is being proved by a crosscut from a winze at a point immediately above the 8th level, from which level the winze is now being continued to the 9th level. The total development work to June 30 amounted to 18,197 ft. Sinking of the main shaft has been resumed and, from the latest advice received, has reached a depth of 821 ft. At 722 ft. down a strong body of ore was met with, but carrying little value. This occurrence, if proved to be the main lode, would point to it having been thrown considerably to the south; but further work will be necessary to decide this question, as it was not expected to strike the reef before 872 ft. in depth. The ore reserves at June 30 were estimated at 874,029 tons (of 2,000 lb.) of an estimated average value of 49 3s. per ton, showing an increase of 68,376 tons as compared with June 30, 1914, after allowing for 130,567 tons treated during the year. This tonnage is composed of 177,793 tons of oxidised ore, value 32 7s. per ton, and 696,236 tons of sulphide ore, value 53 7s. per ton. The value of copper in this estimate is taken at £50 per short ton and gold at 4s. per dwt. Some additional expense in mining costs has been incurred in stoping the ore, owing to a flattening or folding of the reef between the 4th and 5th levels, necessitating a fresh stope drive at the 4th level; but otherwise the stopes have yielded ore up to expectations both in tonnage and value. The reduction plant, which commenced operations in June, 1914, has treated to June 30 last 130,567 tons of ore and produced 2,621-242 tons of blister copper, which has yielded the following: Fine copper, 2,574 415 tons, which realised £188,894; gold, 31,461 178 ozs., which

realised £134,557; and silver, 53,303 857 ozs., which realised £5,506—total, £326,957, equal to 50s. 1d. per ton treated. The working costs amounted to £255,782 18s., equal to 39s. 2 1/2d. per ton, leaving a surplus, exclusive of London expenditure, of £71,174 13s. 3d., or 10s. 10 8/3d. per ton. The extraction for the period under review has averaged 75 3 per cent. of gold and 75 7 per cent. of copper, but these figures cannot be taken as final, owing to an accumulation of untreated concentrates and flue dust, which have remained for subsequent treatment. The effect of the treatment of these by-products is reflected in the returns for August and September, 1915, when the extraction of copper averaged over 97 per cent. for these two months. In considering these results regard must be had to the fact that the reduction plant is the first of its kind in Rhodesia, and that the first few months running was practically of an experimental character; also that, apart from the usual alterations and adjustments consequent on the starting of a new plant, a large portion of the staff had to be trained to deal with a novel process, and a number of trained operators were brought from Australia. The inherent difficulties have been gradually overcome, and it is anticipated that treatment of the full estimated quantity of 15,000 tons of sulphide ore monthly will shortly be attained, with the consequent reduction in working costs to the figure originally estimated for this section of the ore body. Since the close of the financial year additions have been made to the plant for the purpose of treating the oxidised ore above the 2nd level, which is not amenable to the same treatment as the sulphide ore, and crushing of this oxidised ore commenced in August last. It is anticipated that the treatment, at the rate of 6,000 tons monthly, of the 177,793 tons of this class of ore estimated to be in reserve will entail but a comparatively small addition to the total working expenses, and that a profit of 5s. per ton will be realised. It may be mentioned that the working costs in October for the treatment of 12,911 tons of sulphide ore averaged 34s. 2 1/2d. per ton and for 6,175 tons of oxidised ore 10s. 5 1/2d. per ton, or a general average cost of 26s. 6 1/2d. on the 19,086 tons treated that month. During the six months to December 31, 1915, 104,059 tons were treated, yielding 1,823 tons of blister copper, containing approximately 1,795 tons of fine copper, 19,217 ozs. of gold, and 35,844 ozs. of silver. The value of this output, taking copper

## RAND WATER BOARD.

### Chief Engineer's Department.

#### CONTRACT No. 146.

TENDERS ARE HEREBY INVITED FOR THE SUPPLY OF COAL for the period from July 1st, 1916, to June 30th, 1919, or for such time as may be agreed upon.

For particulars apply to the Office of the Chief Engineer, Rand Water Board, where copies of the Contract Documents may be obtained on and after 12 noon on Monday, the 22nd May, upon a deposit of two guineas, which will be returned on the receipt of the Documents and a bona fide tender.

The Board is not bound to accept the lowest or any tender.

All tenders are to be deposited at the Office of the Secretary, Rand Water Board, Corner House, or P.O. Box 1703, Johannesburg, by or before 12 noon, on Thursday, June 1st, 1916.

W. INGHAM, M.Inst.C.E., M.I.Mech.E.,  
Chief Engineer.

**Waterman's Ideal Fountain Pen**

Writing Home about it—

or perhaps writing a full-length story of the exploit, to appear in some popular magazine. Every Sportsman, Traveller and Soldier should carry the Safety type Waterman's Ideal. It should be his constant companion. Always ready to write, always in perfect working order. Incomparably superior to any other make of fountain pen.

**Three types—Regular, Safety, and Lever Pocket Self-Filling.**  
*Of Stationers and Jewellers everywhere.*

**L. G. Sloan, The Pen Corner London, England.**

at £75 per short ton of 2,000 lb., is estimated at £218,920, against working expenses, say, £157,700, leaving an estimated profit of £61,220. Of this output a portion of the copper has been realised at over £75 per ton, and it is anticipated that the balance still unsold will yield a still higher return. A working profit of £68,400 has been obtained from the operations to June 30. Against this, £28,160 has been applied in satisfaction of interest on debentures and loan, reducing the available balance to £40,240. It will be necessary in compliance with the trust deed for securing the issue of debenture stock to reserve the sum of £30,000 for redemption of such stock, leaving £10,240 to be carried forward. In addition to this provision for redemption of debenture stock the loan has been substantially reduced since the date of the balance sheet and at December 31 stood at £188,000.

\* \* \* \* \*

The following is the return of the gold and silver produced during the month of December by the Tati Company, Ltd.:—Lady Mary (J. Marnoch).—Five stamp mill ran 720 hours, crushing 651 tons ore, yielding 246ozs. fine gold, 55 ozs. fine silver; value £1,037 17s. 10d. Cyanide: 1,085 tons of sands treated, yielding 101ozs. fine gold, 87ozs. fine silver; value £432 16s. 2d. Queen of Sheba (tributor, T. W. Angus). Five stamp mill ran 228 hours, crushing 75 tons ore, yielding 30ozs. fine gold, 3ozs. fine silver; value £123 8s. 10d.

\* \* \* \* \*

The report of the Chicago-Gaika Development Company, Limited, for the year ended June 30 last, states that, including £619 brought in, the accounts show an available sum of £6,543. The sum of £5,000 has been written off on account of cost and outlay on abandoned claims, and £756 applied for income-tax, leaving £786 to be carried forward. On June 30, 1915, there was a depreciation on the quoted shares held by the company of £38,900.

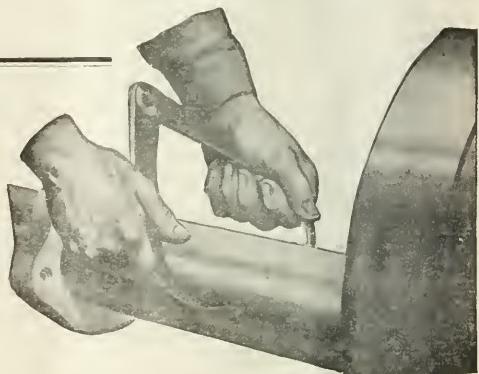
### Rhodesian Chamber of Mines Report.

The report of the Executive Committee for the month of March, 1916, is as follows:—Receipts during the month amounted to £110 5s. and payments to £86 5s. 7d. The balance to credit of current account on the 31st March was £170 19s. 8d. while fixed deposits totalled £1,900. The following is a summary of the returns of native labourers employed on Southern Rhodesian mines during the months of January and February, 1916:—Local: January, 10,552; February, 11,200. Portuguese Territory: January, 8,334; February, 8,469. Northern Rhodesia: January, 7,896; February, 7,828. Nyasaland: January, 10,743; February, 11,207. Other sources: January, 1,998; February, 1,636. Total: January, 39,523; February, 40,310. The number employed in February shows an increase of 7,044 as compared with the corresponding month of 1915. Representations have been made to the railway companies with a view to securing a reduction of rates payable on antimony and other ores, many of which are urgently required for munitions works in Europe. The present system of arranging rates according to the estimated value of the ores is not found to be satisfactory from a mining point of view owing to market fluctuations and other considerations. It has been ascertained that in one instance the railage on an experimental shipment of antimony ore amounted to nearly 30 per cent. of the realised value, and that a loss was incurred by the producer. The committee are hopeful that their representations will be met by the railway companies, and that a regular and permanent export trade in these ores will thus be made possible. During the month a committee of the Chamber was received by His Honour the Administrator, when the following subjects were discussed: Amendment of Gold Trade Ordinance; special protection during the war; Kafir Beer Ordinance; price of mealies.

## HAVE YOU EVER CONSIDERED THE WEAR OF RODS

caused by packings that do not contain  
lubricant but are friction producing?

**"PALMETTO"** PACKING



is so constructed as to permit the rod to slide along it without resistance.

The bearing surface against the rod is kept in a constant state of lubrication from the packing itself and

**DOES NOT WEAR THE RODS.**

NO MATTER HOW YOU CONSIDER "PALMETTO" IT'S THE PACKING OF ECONOMY.

Let us send you samples of the plaited and twist free.

**Greene, Tweed & Co.,**  
SOLE MANUFACTURERS,

41, Tothill Street, Westminster, London, S.W.



HELD IN  
STOCK BY

BARTLE & CO., Ltd., Johannesburg.

E. W. TARRY & CO., Ltd.,

Kimberley, Salisbury and Bulawayo.



## THE WEEK IN THE MINING MATERIAL AND ENGINEERING TRADES.

### Mines Calling for Tenders—Timber and S.A. Pine—Trade Quite Fair.

BUSINESS on the Commercial Exchange was very flat at the beginning of the week, but picked up somewhat on Wednesday. The feature has been the calling for tenders for the second half-year's supplies of everyday lines in use throughout the native compounds, the batteries, engine rooms, and underground workings, etc. One group has called for practically everything which can be reasonably tendered for, whereas others have contented themselves for the present in asking for tenders for produce and vegetables for the compounds, also lime used in connection with the gold saving. Bearing on this subject, an interesting interview was had with a timber merchant, who was asked why his firm did not import Oregon and Baltic logs more freely, as that class of timber was getting very scarce both in Johannesburg and the coast, as the mines were such constant and free purchasers. He explained that before the war, Oregon pine cost about £5½ per standard, and £5½ freight, and now the two items came to £30 landed in Johannesburg, hence his firm would content themselves by getting small quantities as it would be a great risk to purchase some £50,000 worth of logs, with a chance of a big drop when the freight conditions suddenly altered, say, in two months, or even two years, but come it must some day. Obviously such remarks apply to all heavy and expensive goods, and naturally the longer the war lasts the more the statement becomes important as regards watching stocks. As regards timber, however, there is a ray of hope that a relief may come from South African pine, as an experimental order has been given only this week, for a consignment of yellow wood. The broker giving the information showed a copy of the order and also remarked that similar wood was once on a time freely used for building houses in the Barberton district. A broker whose chief business is the iron pipe line complains that orders are few and far between as he did nothing up to Wednesday of this week. In consequence of the spraying of the stopes and other parts of the mines to allay the dust, in accordance with the Government regulations, there has been a big trade for pipes with the mines. The only explanation he could vouchsafe about the dulness at the moment is that according to his information from the Reef, it appears that with the present white staff, through so many having joined the colours, things are working at high pressure. Although there are plenty of natives available yet there is no disposition on the part of the mines to open up new stopes or works, other than those immediately required in sending ore to the mills. There is no undue economy being used in everything connected with the actual output of gold. In fact from his own experience and knowledge the mines are, if anything more liberal when it is a question of keeping the batteries going at full tilt.

There is quite a new element entering into the agricultural machinery trade and that is the native farmers are purchasing more freely and regularly. Naturally it is not the best class of goods, although at times if they take a fancy to a plough or wagon and other useful vehicle or implement, the money is forthcoming after much bartering

and perhaps several visits. There are a few native ploughs and harrows being made here, also a nice little business is being done in fixing up cheap lines by sorting out the best parts of broken ploughs and the more simply constructed implements and making complete agricultural instruments.

#### THE MARKET IN BRIEF.

*Iron and Steel.*—According to oversea advices, all open contracts in Britain for iron, of a speculative nature, may be closed at the end of May, which also applies to copper. Steel works there are experiencing great difficulty in obtaining the necessary supply of raw material, hence prices remain very firm indeed. Cleveland was quoted at 84s. 6d. spot cash and 85s. one month, which is just sufficient to illustrate that the tendency of the market is on the up grade.

*Timber and Buildings.*—Following on the advance of deals, now floorings, ceiling and clear pines show a fractional increase with an extra firm tendency, as the quiet absorption from week to week, with full replenishment, is beginning to tell on stocks throughout the country. Under these circumstances timber merchants are shy in quoting for anything more than a month in advance. Mining poles are fairly plentiful, but they are coming from railway stations farther and farther away as the months roll round. Second-hand timber and material generally for building purposes are in better demand for town and suburbs. All stuff which can be reasonably worked in is quickly picked up, now that the new material is getting dearer. The demand is quite fair throughout the building trade, chiefly for new erections for private dwellings, then come alterations and additions, as many people are tired of waiting for cheaper material, therefore many jobs which have been pigeon-holed for a long while are now coming out for accomplishment. Another reason for this move is perhaps the beautiful weather prevailing to encourage building operations.

*Chemicals.*—Rhodesia is purchasing nine chemicals from Johannesburg very freely. Mercury is the chief thing in the orders, which was secured in some cases just a fraction under £18, although that is the recognised commercial price. Carbolic acid is up to 7s. 6d. lb. and all carbon preparations are advancing. Glycerine is practically unobtainable in town, the nominal quotation is 1s. 6d. lb. locally. This acute scarcity is in consequence of its export being prohibited from Britain, and there it can only be sold by chemists as per doctors' prescriptions, as the munition factories requisition all available supplies.

*Oils and Paints.*—Although the demand remains about even for Johannesburg and country, there is no outstanding feature to report, excepting that stocks are more plentiful. The Reef travellers say there is quite a dearth of orders from the mines, as there is no work done either in painting or other things which can be put off without actually interfering with the running of the mines and their immediate production. A traveller has just returned from a coast town, where white lead was 97s. 10d. per 100 lbs, as compared with 75s.

Cable:  
"McKECHNIE,  
WIDNES."

## McKECHNIE BROTHERS, LIMITED.

SMELTING WORKS: WIDNES, ENGLAND.  
BIRMINGHAM, NEWCASTLE, MANCHESTER, LEEDS AND BRISTOL.

BUYERS OF

### COMPLEX ORES

Which contain COPPER.

COPPER-TIN ORES

COPPER-LEAD ORES.

COPPER-ZINC ORES

Residues, Mattes, Concentrates, Precipitates.

here. At the town in question the business is in a few hands and is restricted accordingly, hence the demands from our free market as compared with the smaller places, who control business to their own advantage and maybe in the long run to their own loss of orders.

**Electrical Goods.**—There is an acute shortage in all power transmission goods, such as high tension copper wire, and other things made of copper. Switches, both oil and knife, are also scarce, as the various municipalities have for some time past purchased freely of everything required in their running plants. Household electrical goods are fairly plentiful in town. There are any number of radiators in stock which are being profusely exhibited for prospective purchasers for the coming winter.

#### REVISED PRICE LIST.

Approximate war prices, subject to quick change.—  
Mining and building hardware: Iron, imported, round up to 1 in., 27s. 6d.;  $\frac{1}{2}$  in. to 2 in., 18s. 6d.;  $2\frac{1}{4}$  in. to 6 in., 25s. per 100 lbs. Do., square, up to 1 in., 27s. 6d.;  $\frac{1}{2}$  in. to  $2\frac{1}{4}$  in., 18s. 6d.;  $2\frac{1}{2}$  in. to 5 in., 25s. Flats, 3-16 in., 37s. 6d.; all from 4 in. up, 25s. Angles,  $\frac{1}{2}$  in. to 3-16 in., 30s.;  $\frac{1}{4}$  in., 27s. 6d.; 5-16 in. to  $\frac{3}{4}$  in., 25s., excepting 5 x 4 x  $\frac{3}{4}$  in.; mild steel bar, 3½d. lb.; drill, 6½d. lb.: tool, 7½d. to 9d. lb.; steel plates, 10ft. x 4ft. x 1-16in., 27s.; do.,  $\frac{1}{2}$  in., and 3-16 in., 26s. 6d.;  $\frac{1}{4}$  in. and upwards, 25s.; 10 ft. x 5 ft. x 1-16 in., 28s. 6d.;  $\frac{1}{2}$  in. and 3-16 in., 26s.; 10 ft. x 6 ft. x 1-16 in., 28s. 6d.; 3-16 in. x 10 ft. x 4 ft., 26s.;  $\frac{1}{4}$  in. up, 10 ft. x 4 ft., 25s. to 27s.; hexagon bolts,  $\frac{3}{8}$  in. to 3 in., 8d. per lb.; over 3 in., 7d. lb.;  $\frac{1}{2}$  in. up to 2½ in., 50s.; 2½ in. to 6in., 47s. 6d.; 6½ in. and over, 45s.;  $\frac{3}{8}$  in. up to 2½ in., 45s.; 2½ in. to 6in., 42s. 6d.; 6½ in. and up, 37s. 6d.;  $\frac{3}{8}$  in.,  $\frac{7}{8}$  in., and 1 in. up to 2½ in., 40s.; 2½ in. to 6in., 37s. 6d.; 6in. and up, 32s. 6d. 100lb. Nuts,  $\frac{3}{8}$  in., 9d. lb.;  $\frac{1}{2}$  in., 50s.;  $\frac{5}{8}$  in. to 1½ in., 47s. 6d.; 1½ in. to 1¾ in., 52s. 6d. per 100 lbs.; 2 in., 7½d. per lb.; washers,  $\frac{1}{2}$  in. and under, 37s. 6d., and above that size, 32s. 6d. per 100lb.; shoes and dies, 32s. 6d. to 35s. per 100lb.; rails, £20 per ton; picks, 4 lbs., 27s. per doz.; shovels, 32s. 6d. to 42s. 6d. per doz.; hammers, drill, 7½d. to 9d. lb.; hammer handles (best American), 14 in., 3s. 6d.; 24 in., 5s. 6d.; 30 in., 7s. 6d.; 36 in., 10s. 6d. per doz.; metal, anti-friction, 1s. per lb.; galvanised iron, 24 gauge, 6 ft. to 10 ft., 9¾d.; 11ft., 10¾d.; 12ft., 10½d.; 26-gauge, 6ft. to 10ft., all lengths, 8½d. to 8½d. per ft. all-round; flat galv., 18 to 24 gauge, 32s. 6d.; 26 gauge, 34s. 6d. 100 lbs.; floor brads, 30s.; ceiling, 30s.; wire nails, 27s. 6d. to 32s. 6d. per 100 lbs.; solder, 50 per cent., 1s. 2d. per lb.; locks, rim, 45s.; mortice, 60s. doz.; barbed wire, 22s. 6d. to 25s. 100 lbs. coil.

**Timber:** Deals, Baltic, 9 x 3, up to 16 ft., 1s.; over, 1s. 1d. to 1s. 1½d. (Oregon, 11½d.); flooring, 4½ x  $\frac{3}{4}$  and 6 x  $\frac{7}{8}$ , 6d. to 6½d. per sq. ft.; do., 4½ x  $\frac{1}{2}$ , 7d.; and 6 x 1½, 7d.; Oregon edge grain, 6d. to 7½d.; ceilings, 6 x  $\frac{1}{2}$ , 3½d. to 3¾d. per sq. ft.; Oregon, 4 x  $\frac{1}{2}$ , 4½d.; pitch pine, 7s. 6d. to 7s. 9d. per cub. ft.; Oregon, 5s. 6d. per cub. ft.; clear pine,  $\frac{1}{2}$  in., 12 in., 7½d. per ft.; 1 in. x 12 in., 8d.; teak, small planks, 15s. per cub. ft.; do., large, 16s.; jarrah, 8s. 6d. per cub. ft.; poplar, 1 in. x 12 in., 9d.; scantling, 9 x 3, 11d. to 1s. per ft.

**Bricks, cement, lime, etc.:** Cement, nominal, 34s. 6d. per cask; Pretoria Portland, 9s. 3d. per bag; 8s. 3d., truck loads; lime, white, 7s. 9d.; truck loads, 6s. 9d., slaked; do., 5s.; blue, 3s. 6d.; plaster lime, 4s.; bricks at kiln, stock, 36s. to 42s.; wire cuts, 40s. to 50s. pressed, 65s. per 1,000; road transport now normal; salt and white glazed bricks, £27 10s per 1,000; tiles, roofing, £17½ square; glazed tiles, 10s. 6d. to 17s. 6d. yard; paving cement tiles, 8s. 6d. yard laid; terra cotta tiles, £15 per

1,000; reinforced concrete columns, 6 ft. plain, 22s. 6d., fluted, 24s.; fireclay bricks, £9½, good average, per 1,000; clay chimney pots, 80s. per doz.; fireclay, 37s. 6d. ton on rail.

**Oils, paints, lead, oxides, glass:** Linseed, raw, 30s.; boiled, 31s. 6d. per 5-gall.; white lead, 72s. 6d. to 75s. per 100 lbs.; turpentine, 54s. 2/4 gallons; 10/1, 59s.; coal tar, imported, 10s. to 11s. per 5 gallons.; oxide in oil, 32s. 6d. to 37s. 6d. per 100 lbs.; dry oxide, 21s. to 22s. 6d.; S.A. crude oxide, 12s. 6d.; linseed oil putty, 4s. 6d. per 12½lb. bladders; 30s. casks of 100 lbs.; grease A.F. axle, 23s. 6d. to 25s. per 100 lbs.; tallow, 9d. per lb.; White Rose paraffin, 15s. 6d. 2/5; Laurel do., 15s. 3d.; petrol, 26s. 6d. 2/4; motor oil, 6s. to 7s. 6d. per gallon; lubricating oils, 25s. per case; cylinder, 35s.; paints in tins, 10d. to 1s. per lb., according to quantity, and if ordered to be mixed, 15 per cent. on pre-war rates. British plate-glass, 1 in., 3s. 6d.; do., mirror, 4s. 6d.; window, 16 oz., 1s. to 1s. 3d. ft.

**Chemicals:** Mercury, £18 per 75 lb. bottle; bichromate potash, 1s. 6d. lb.; chlorate, 2s. 6d. lb.; permanganate, 7s. 6d. lb.; alum, 9d. lb.; carbolic acid, 7s. 6d. lb.; borax, 66s. 100 lbs.; cyanide soda, 1s. 6d. lb.; hypo, 1s. lb.; acetate lead, 67s. 6d. 100lb.; litharge (assay), 75s. (commercial) 50s. 100 lbs.; zinc sheets and blocks, 1s. 3d. lb.; plumbago crucibles, 6d. per number.

**Electrical Goods:** Lamps, high volts., British, Holland & American, 16s. to 21s. wholesale, and 21s. to 27s. dozen, retail; carbon lamps, 7s. 6d. per dozen; pure rubber flex, 9d. to 1s. per yard; 3/20 coils of wire, 30s.; do., 3/22, 26s.; tubing, 12s. to 13s. 100 ft.; keyholders, 2s. 6d. each; round blocks, 3½ in., 4s. dozen; lamp holder cord grips, 15s. doz.; switches, 5 amp., 18s. to 14s. doz.; British glass shades, 24s. to 36s. doz.; Bohemian shades finished; porcelain shackles, 14s. 6d. doz.; do., bobbins, 16s. 6d. to 18s. 100; cleats, 18s. per 100; P.O. insulators, 18s.; motors, 3 h.p., about £28 to £35, new.

#### Betsiriry Oil.

The manager of the Betsiriry Proprietary Oil Fields, Ltd. (Mr. J. E. S. Billing) cables from Madagascar on the 5th inst. that the borehole has reached a depth of 1,300 feet, having passed through salt-water into blue sandstone impregnated with lime. Drilling has been delayed on account of repairs and serious illness of one of the drillers, who has now recovered.

#### ANSWERS TO CORRESPONDENTS.

*All inquiries addressed to the Editor must bear the writer's name and full address. We cannot reply to inquiries by letter, but telegrams with replies prepaid will be answered. Correspondents are requested to write their names and pseudonyms distinctly.*

**I.R.D.**—The next report and accounts will cover the longer period.

"**Apex**" (Newcastle).—(1) Yes. Prospects fair, but speculative. (2) All equally speculative. (3) Certainly.

"**Shareholder**" (Capetown).—Write to the secretary of the company, and if his reply is unsatisfactory, communicate with us again.

"**Claimholder**."—A reduction of claim licences will probably be included in the next amendment to the Gold Law.

"**A. J. B.**"—(1) Hold. (2) Speculative. (3) Same as last year.

"**W. S.**" (Kingwilliamstown).—(1) Yes. (2) About 6, but probably much more. (3) Yes. (4) Liquidation by some holders in order to purchase more speculative stocks.

"**S. N.**"—An announcement will be made as soon as sufficient development has been done to warrant conclusions being drawn.

"**Anxious.**"—No truth in the rumour.

#### FRANK E. NOTT, Private Detective.

P.O. Box 1587. 80 & 81, PERMANENT BLDGS. *Telegrams: "SLEUTH."*

Divorce, Slander, Watching, etc. Delicate negotiations in all parts of the world. Consultations Free.

# HADFIELDS Ltd.

Workmen employed  
about 6,000.

Hecla and East Hecla Works, Sheffield, England.

Works area over  
110 acres.

## "HECLA" DISC CRUSHER.

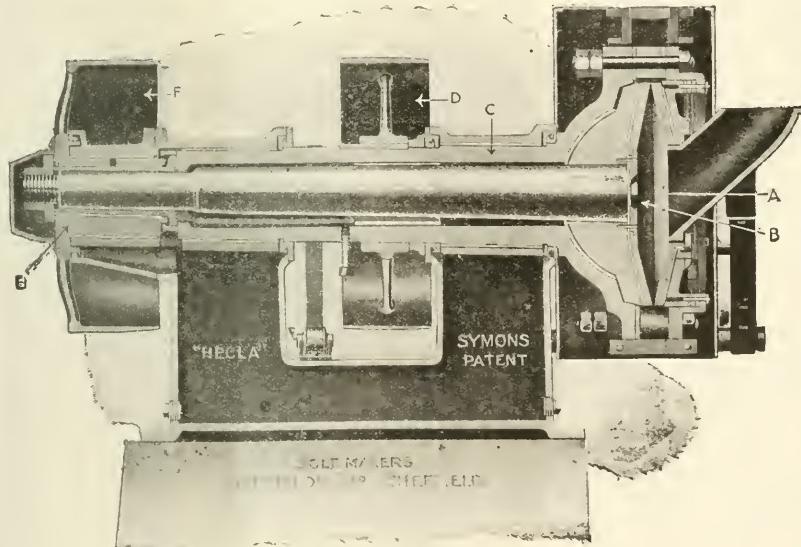
(SYMON'S PATENT).

THE CRUSHER that excels in output, in economy of power, in uniformity of product,  
and in low cost of maintenance. WRITE FOR CATALOGUE.

## THE ONLY CRUSHER

that reduces ROCK and ORE, WET or DRY, successfully to a smaller product.

MAKERS OF ALL KINDS OF  
STONE BREAKING AND ORE CRUSHING PLANTS.



SOLE MAKERS OF  
HADFIELDS' PATENT  
**"ERA"**  
**MANGANESE STEEL.**

The Supreme Material  
For the Wearing Parts of Stone  
Breaking & Ore Crushing Machinery.

Head Office for South Africa :

**46 & 47, Cullinan Buildings,  
JOHANNESBURG.**

'Phone 5900. P.O. Box 1009.  
Tel. Add.: "HECLA."

Stores : **DENVER, TRANSVAAL.**  
(Adjoining Denver Station).

## The Week's Meetings.

### KNIGHT CENTRAL.

The ordinary general meeting of shareholders in the Knight Central, Limited, was held on May 12. Mr. W. H. Dawe presided. The shares represented numbered 9,709.

In moving the adoption of the reports and accounts, the chairman said:—Gentlemen.—From the financial statements for the year ended December 31st, 1915, together with the reports of the directors, the consulting engineer and the manager, which have been in your hands for some time, you will have become conversant with the results of the operations of your company during the past financial year. The profit on working amounted to £45,433, as against £42,753 for the previous year, whilst the tonnage milled was considerably higher, at the figure of 326,060 tons. The reason for this increase was the ample supply of native labour available, the average number of natives employed per month during 1915 being 2,405, as against 1,963 in 1914. It is most fortunate that the supply of labour has been so satisfactory, as it enabled the company to mill a larger tonnage, thus counterbalancing the heavier charges which had to be met. These increases consisted of the higher cost of supplies and the amount of the allowance paid to those of the company's employees who were given permission to volunteer for active service. It is satisfactory to note that in spite of this additional expenditure, the increase in the tonnage milled resulted in a decrease in the working costs of 7.58d. per ton milled, and that the total profit was more than sufficient to meet the capital expenditure, which amounted to £36,160. Of this amount £38,064 was spent on shaft-sinking and machinery and plant. The result of the past year's working, therefore, is that the financial position of your company has been somewhat further strengthened. The amount of cash shown in the balance sheet at the end of the last financial year is slightly less than that of the previous year but this is explained by the fact that the amount of stores on hand has been considerably increased. The question of carrying a large amount of stores is one which hardly requires mention, as it is so obviously advantageous to make the fullest possible provision against contingencies which might arise in the present circumstances. Of the tonnage milled, 69.1 per cent. was taken from the ore reserves, whilst the balance was obtained from blocks which were originally estimated as unpayable, and rock obtained from development, shaft sinking and station cutting in the reef, and sundry other sources, which are detailed in the manager's report. In regard to the employment, the total footage accomplished for the year, exclusive of shift sinking, was 11,861 $\frac{1}{2}$  feet. Of this total 66.7 per cent. was on undisturbed reef; 18.5 per cent. was not on reef; 1 per cent. was main cross-cutting; 3.8 per cent. was in the ore passes; and the balance of 10 per cent. was undertaken in the first instance as prospecting work.

### The Simmer Dyke.

The payable ore exposed north of the Simmer Dyke during the past year

amounted to 218,100 tons; the total reserves of payable ore north of the Simmer Dyke, on the 31st December last amounted to 406,400 tons, of an average value of 5.84 dwts. over an estimated stoping width of 62.4 inches. This total shows a decrease of 24,100 tons on the total of the previous year, which is largely accounted for by the elimination of 16,800 tons which were previously included in the reserves, as the additional information available at the 31st December last indicated that this tonnage was of too low a value to warrant its inclusion. The chief point of interest to you must necessarily be in connection with the development south of the Simmer Dyke. During the past year the average value of the reefs exposed in this section of the property did not show any material improvement, with one exception, and that was a stretch of 305 feet on the 16th level, which gave an average value of 6.3 dwts. over an estimated stoping width of 50 inches. Your consulting engineer mentions that this was the longest continuous exposure of payable reef found south of the dyke, but as this possible ore body is exposed on only one side, no estimate of the probable tonnage occurring at this place has been made, nor has any tonnage south of the dyke been included in the ore reserves. Towards the close of the financial year the main reef and the south reef were intersected in the 17th level crosscut at the west subsidiary shaft. Details of the development accomplished on the 17th level, which was started after the close of the financial year, have been published, as well as some information in connection with the intersection of the reef on the 18th level. I think you will agree with me that in the ordinary way the publication of results obtained from development work in any one month is not a very satisfactory method of procedure, as the results of a month's work naturally refer only to a limited amount of development, and do not give an adequate idea of the general results of the company's operations. In this case, however, your directors decided to publish the results obtained at the end of each month, because of the importance of the values obtained south of the dyke in regard to the future prospects of your company. It was thought that a monthly publication of this information might be made until the date of this meeting, and that for the future we can revert to the usual method of giving the information regarding development in the quarterly reports.

### Development Work.

I think it will be of interest if I give you a detailed statement of the development accomplished south of the dyke from the 1st of January last to the 30th of April. This information is as follows:—West Shaft:—17th East—Main Reef: From 110 to 180 feet, 75 feet, average 10.5 dwts. over 83in.; from 185 to 295 feet, 115 feet, unpayable. 17th West—Main Reef: From 30 to 50 feet, 25 feet, unpayable. 18th East—Main Reef: From 0 to 20 feet, 25 feet, average 12.0 dwts. over 83in. 18th West—Main Reef: From 0 to 5 feet, 10 feet, average 5.7 dwts. over 65in.; from 10 to 15 feet, 10 feet, faulted off reef. 16th East Winze at 505 feet East—South Reef: From 45 to 100 feet, 60 feet, average 11.8 dwts. over 47in. 17th East—South Reef: From 0 to 100 feet, 105 feet, average 10.0 dwts. over 48in.; from 105 to 195 feet, 95 feet, unpayable. 17th West—South Reef: From 0 to 105 feet, 110 feet, average 8.2 dwts. over 51in.; from 110 to 170 feet, 65 feet, unpayable.

Auxiliary Winze 400 feet West of East Shaft.—17th East, Main Reef—North Section: From 95 to 145 feet, 55feet, average 6.6 dwts. over 50in. 17th West, Main Reef—North Section: From 100 to 170 feet, 75 feet, unpayable. 17th East, Main Reef—South Section: From 0 to 100 feet, 105 feet, unpayable.

### Satisfactory Values.

From the foregoing you will clearly see the footage which has given satisfactory results, as well as that which is unpayable; but I might point out that the payable stretch on the 17th level, south reef, going east, is not under the payable stretch on the 16th level. At present the values on the 17th level are unpayable, but the level will soon be under the payable stretch of the 16th level, and it is hoped that payable values will again be obtained, especially as the 16th east winze, at 505 feet east of the west shaft, has given good values for a depth of 60 feet. Another feature of interest to which I would draw your attention is the satisfactory values obtained on the 18th level where the reef was intersected. It will be from two to three months before development can be proceeded with on this level, as the necessary station has first to be completed, but the shaft has already been sunk 50 feet below the 18th level station. The east shaft has been sunk 30 feet below the 17th level, and the station at that level has been completed. The crosscutting to the reef from the 17th level station is being proceeded with. The auxiliary winze, which is 400 feet west of the east shaft, has been carried 15 feet below the 18th station; that station has been completed, and crosscutting to the reef is in hand, and it is estimated that the reef will be reached in about two months' time. This information comprises every important detail up to date.

Although the results obtained on the 17th level refer to a comparatively small footage, still, taking these in conjunction with the values obtained at the intersection of the reef on the 18th level, they certainly give additional point to the concluding paragraph of your consulting engineer's report, which reads as follows:—"The exposure of good values in the lowest level of the mine has made the outlook for your property much more hopeful, and during this year every endeavour will be made to accelerate development and to open up the lower levels in this portion of the mine." I think that the policy which has been followed by your Board in maintaining a strong financial position is being justified. Up to the end of December last the total area which had been explored south of the Simmer dyke was equal to 21 claims, whereas your company's total claim area south of that dyke is 677 claims; and although it would have been very satisfactory to your directors to have declared a dividend, it must be obvious to all that such satisfaction would be but short-lived if the company found itself without funds to undertake the opening up of the large claim area at its disposal. In conclusion, I have to make one brief reference to the number of your company's employees on active service at the 30th April, 1916. Out of a total number of 320 employees, 54 men (equal to 17 per cent.) were at the front, and in view of the necessity of retaining the services of those men who are required to keep the mines going, this is a very satisfactory record. On behalf of your directors I wish to express appreciation of the services rendered by the consulting engineer, Mr. D. Wilkinson, and the manager, Mr. A. J. Jones.

The reports and accounts were adopted. All of the directors—Messrs. W. H. Dawe, E. A. Wallers, R. R. Hollins, J. Jolly, A. G. Gill, F. R. Lynch, and M. Honnel—retired, but were re-elected.

Messrs. C. L. Andersson and Co. and Mr. Charles Stuart were reappointed auditors.

## SOUTH AFRICAN LAND AND EXPLORATION CO., LTD.

The annual meeting of the South African Land and Exploration Company, Ltd., was held in Meischke's Buildings, Johannesburg on May 16th.

In moving the adoption of the report and accounts, Mr. C. L. Andersson said the financial position continued to be satisfactory. The revenue for the period under review, which amounted to £1,674, an increase of £154 on the figure for the previous 12 months, exceeded the expenditure by £25 12s. 10d., and the cash and cash assets at 31st December, 1915, amounted to approximately £15,157. Continuing, the chairman said:—You will note that a portion of the company's funds has been invested in Union Treasury bills. Since the close of the year your directors have purchased £4,000 of British Exchequer bonds, which are repayable in 1920, and bear interest at 5 per cent. per annum free of income tax. I think you will agree that, apart from the fact of its being an attractive investment, surplus moneys could not be better employed at the present time. With regard to the negotiations for a tribute contract in respect of the farm Vlaklaagte No. 39, to which reference is made in the directors' report, I am pleased to be able to state that these have been satisfactorily concluded, and an agreement has been entered into. It is hoped that operations may lead to the discovery of a permanent tin lode on this farm. Interest has, as you are aware, recently centred in the East Rand district,

and the Union Parliament recognising the importance of amending the Gold Law so as to facilitate the opening up of this area, have appointed a Commission to inquire into the matter, and their report will in due course be laid before the House. In the event of anticipated developments taking place in this district, your directors may have an opportunity of dealing to advantage with your farm Witpoort No. 12, which is situated in this locality. Your farms have remained under the supervision of the Transvaal Land Owners' Association, and our thanks are due to the secretary and district agents for their assistance in securing suitable tenants for properties and in the collection of rents during the year under review. In reference to the resignation of Mr. Clement Davies, the chairman said that Mr. Davies was keenly interested in the welfare of the company, and devoted considerable time and attention to its affairs during his long term of office as chairman. As Mr. Davies had been able to accept a seat on the London committee his valued services will not be altogether lost to the company.

The report and accounts were adopted.

Messrs. C. L. Andersson and J. H. L. Manisty were elected to the directorate.

Messrs. Diamond and English were re-appointed auditors.

## MARIEVALE NIGEL.

Presiding at the 19th ordinary general meeting of shareholders in the Marievale

Nigel Gold Mines and Estate, Limited, held in Cullinan Building on May 12. Mr. W. H. Dawe said that the directors were holding the mynpath in view of the prospects on the Far East Rand.

The report and accounts were adopted.

Messrs. W. H. Dawe, C. S. Goldmann, J. Emrys Evans, A. G. Gill, and W. H. B. Frank were re-elected directors.

Messrs. C. L. Andersson and Co. and Mr. G. M. Pemberton were reappointed auditors.

## Rietkuil Gold Mines.

The 19th ordinary general meeting of shareholders in the Rietkuil Gold Mines, Limited, took place in the boardroom, Cullinan Buildings, on May 12. The report showed that no change had taken place in the company's property. The expenditure had amounted to £6,593 18s. 2d., made up mostly of interest on loans and call licences.

On the motion of the Chairman, Mr. W. H. Dawe, the report and accounts were adopted.

Messrs. Dawe, R. Goldmann, F. R. Lynch, J. H. Ryan, and A. G. Gill were re-elected as the directorate.

Messrs. F. W. Diamond and English and Messrs. A. Aitken and Carter were re-appointed auditors.

## New Companies.

The following is the list of companies registered at Pretoria during the month of April:—  
 Gajipre, Ltd., 1st Avenue, Asiatic Bazaar, Germiston; capital £500.  
 United Printing and Publishing Co., Ltd., 2 Kort Street, Johannesburg; capital £5,000.  
 Wainer, Ltd., 58 Noord Street, Johannesburg; capital £2,000.  
 N. Akkerman, Beperki, Markstraat, Kerkplein, Ermelo; capital £810.  
 Promoters, Ltd., 57 Kempsey Buildings, Fox Street, Johannesburg; capital £2,000.  
 Transvaal Milling Co., Ltd., corner of President and West Streets, Johannesburg; capital £5,000.  
 Lucerne Lime Fertiliser Co., Ltd., 82/84 Exploration Buildings, Commissioner Street, Johannesburg; capital £15,000.  
 Fancy's Estate, Ltd., 512, corner of 17th and De la Rey Streets, Vrededorp, Johannesburg; capital £4,000.  
 The Central Engineering Works, Ltd., 87 Marshall Street, Johannesburg; capital £1,500.  
 M. Curseji, Ltd., Hospital Street, Cleveland, Johannesburg; capital £1,000.  
 Mohamed & Abdoolla, Ltd., 141 Market Street, Johannesburg; capital £2,000.  
 Warnes Café, Ltd., 24 Royal Chambers, Simmonds Street, Johannesburg; capital £1,500.  
 B. Korr & Co., Ltd., Lewis Buildings, 157 President Street, Germiston; capital £500.  
 Dayas, Ltd., Main Road, Asiatic Bazaar, Boksburg; capital £1,000.  
 The Union Bottling Co., Ltd., 247 St. Andries Street, Pretoria; capital £2,000.  
 Schallies, Ltd., 472 Vermeulen Street, Pretoria; capital £750.  
 Union Wine and Spirit Co., Ltd., 150b Commissioner Street, corner of Smit Street, Johannesburg; capital £3,000.  
 The Retailers' Association of South Africa, 613 Sack's Buildings, Jonker Street, Johannesburg; capital £50.  
 Printers, Ltd., 46a Simmonds Street, Johannesburg; capital £500.  
 Good Hope Salt Works, Ltd., 26/30 Von Willigh Street, corner of Main Street, Johannesburg; capital £300.  
 New Banket Reefs, Ltd., 8/14 Trust Buildings, Fox Street, Johannesburg; capital £3,000.  
 Keating's Pharmacy, Ltd., corner of Quartz and Pretoria Streets, Hospital Hill, Johannesburg; capital £1,000.  
 Choonara & Co., Ltd., 44 Commissioner Street, Burgershoop, District Krugersdorp; capital £675.  
 Amarshi Gokal, Ltd., corner of Krogh and Trichardt Streets, Louis Trichardt; capital £600.  
 Cassim, Ltd., corner of Lombard and Rivier Streets, Potchefstroom; capital £1,000.  
 Wadwalla, Ltd., Lot No. 27 of the farm Wonderfontein No. 41, District Marico; capital £500.

## FOREIGN COMPANY.

Sakalava Madagascar Proprietary Oil Fields, Ltd., Johannesburg.

## INCREASE OF CAPITAL.

Delmas Milling Co., Ltd., Johannesburg; increased from £3,000 to £7,500.

## SPECIAL AND EXTRAORDINARY RESOLUTIONS.

Banket Reefs, Ltd., Johannesburg; liquidation.  
 Pietersburg Club, Ltd., Pietersburg; alteration of articles.  
 Delmas Milling Co., Ltd., Johannesburg; increase of capital.  
 Norman Hill & Co., Ltd., Johannesburg; liquidation.  
 New Spes Bona Gold Mining Co., Ltd., Johannesburg; liquidation.  
 Pelucine Chemical Industries, Ltd., Johannesburg; alteration of articles.  
 Germiston General Agency, Ltd., Germiston; alteration of articles.  
 The United Mineral Water Factories, Pretoria, Ltd., Pretoria; alteration of articles.  
 Pretoria Industrial Co-operative Co., Ltd., Pretoria; alteration of articles.  
 Pretoria Racing Club, Ltd., Pretoria; confirmation of agreement.  
 African British and Continental Seed and Plant Co., Ltd., Johannesburg; debentures.  
 The Union Brick Co., Ltd., Pretoria; powers of directors.  
 The Stavoren Tin Mining Co., Ltd., Pietersburg; increase of capital.

## IN VOLUNTARY LIQUIDATION.

New Spes Bona Gold Mining Co., Ltd., Johannesburg; capital £154,140.  
 Norman Hill & Co., Ltd., Johannesburg; capital £2,000.  
 Banket Reefs, Ltd., Johannesburg; capital £18,000.

## CHANGE OF ADDRESS.

M. E. Furniss, Ltd., Ulster Buildings, 38 Eloff Street, Johannesburg.  
 Promoters, Ltd., 184 Stock Exchange Buildings, Johannesburg.

## S. A. MINING YEAR BOOK--1915

By S. R. POTTER.

(Editor, "S. A. Mining Journal.")

Vol. I.

## ANNUAL MEETINGS AND REPORTS COMPLETE

"A complete account of the present position and future prospects of South African mines, put on permanent record for ready reference." — The Star

"The only authoritative work of reference on South African mining companies produced in this country." — Rand Daily Mail

"To holders of Kaffir shares and prospective investors this is an aggregate of authoritative information that has a distinct value." — Financial News."

Cr. folio. 306 pp., Cloth, Gilt Letters.

Obtainable from the office of this paper.

PRICE 3/6.

Post Free 5/-.

## Consolidated Langlaagte Mines, Limited.

(INCORPORATED IN THE TRANSVAAL.)

### NOTICE TO SHAREHOLDERS.

NOTICE IS HEREBY GIVEN that the Thirteenth Ordinary General Meeting of Shareholders in the above Company will be held in the Board Room, Consolidated Building, corner of Fox and Harrison Streets, Johannesburg, on Friday, the 26th day of May, 1916, at 10.20 o'clock in the forenoon, for the purposes following:—

- (1) To receive and consider the Balance Sheet and Accounts for the year ended 31st December, 1915, together with the Reports of the Directors and Auditors.
- (2) To elect Directors in the place of Messrs. J. Friedlander and J. Munro, who retire in terms of the Articles of Association, but are eligible, and offer themselves for re-election.
- (3) To appoint Auditors for the current year, and to fix the remuneration for the past audit.
- (4) To transact any other business which, under the Articles of Association, may be transacted at an Ordinary General Meeting.

The Transfer Books will be closed from the 11th to the 26th May, 1916, both days inclusive.

By Order of the Board,

JOHANNESBURG CONSOLIDATED INVESTMENT COMPANY, LIMITED,  
*Secretaries.*

*per* FRANK HALL.

Head Office,  
Johannesburg,  
20th March, 1916.

## Glencairn Main Reef Gold Mining Co., Limited.

(INCORPORATED IN THE TRANSVAAL.)

### NOTICE TO SHAREHOLDERS.

NOTICE IS HEREBY GIVEN that the Twenty-third Ordinary General Meeting of Shareholders in the above Company will be held in the Board Room, Consolidated Building, corner of Fox and Harrison Streets, Johannesburg, on Friday, the 26th day of May, 1916, at 2.30 o'clock in the afternoon, for the purposes following:—

- (1) To receive and consider the Balance Sheet and Accounts for the year ended 31st December, 1915, together with the Reports of the Directors and Auditors.
- (2) To elect Directors in the place of Messrs. C. Marx and S. B. Joel, who retire in terms of the Articles of Association, but are eligible, and offer themselves for re-election.
- (3) To appoint Auditors for the current year, and to fix the remuneration for the past audit.
- (4) To transact any other business which, under the Articles of Association, may be transacted at an Ordinary General Meeting.

The Transfer Books will be closed from the 11th to 26th May, 1916, both days inclusive.

By Order of the Board,

JOHANNESBURG CONSOLIDATED INVESTMENT COMPANY, LIMITED,  
*Secretaries.*

*per* FRANK HALL.

Head Office,  
Johannesburg,  
20th March, 1916.

## Ginsberg Gold Mining Co., Limited.

(INCORPORATED IN THE TRANSVAAL.)

### NOTICE TO SHAREHOLDERS.

NOTICE IS HEREBY GIVEN that the Twenty-first Ordinary General Meeting of Shareholders in the above Company will be held in the Board Room, Consolidated Building, corner of Fox and Harrison Streets, Johannesburg, on Friday, the 26th day of May, 1916, at 10.20 o'clock in the forenoon, for the purposes following:—

- (1) To receive and consider the Balance Sheet and Accounts for the year ended 31st December, 1915, together with the Reports of the Directors and Auditors.
- (2) To elect Directors in the place of Messrs. E. Brayshaw and C. Marx, who retire in terms of the Articles of Association, but are eligible, and offer themselves for re-election.
- (3) To appoint Auditors for the current year, and to fix the remuneration for the past audit.
- (4) To transact any other business which, under the Articles of Association, may be transacted at an Ordinary General Meeting.

The Transfer Books will be closed from the 11th to the 26th May, 1916, both days inclusive.

By Order of the Board,

JOHANNESBURG CONSOLIDATED INVESTMENT COMPANY, LIMITED,  
*Secretaries.*

*per* FRANK HALL.

Head Office,  
Johannesburg,  
20th March, 1916.

## Government Gold Mining Areas (Modderfontein) Consolidated, Ltd.

(INCORPORATED IN THE TRANSVAAL.)

### NOTICE TO SHAREHOLDERS.

NOTICE IS HEREBY GIVEN that the Sixth Ordinary General Meeting of Shareholders in the above Company will be held in the Board Room, Consolidated Building, corner of Fox and Harrison Streets, Johannesburg, on Friday, the 26th day of May, 1916, at 3 o'clock in the afternoon, for the purposes following:—

- (1) To receive and consider the Balance Sheet and Accounts for the year ended 31st December, 1915, together with the Reports of the Directors and Auditors.
- (2) To elect a Director in the place of Mr. C. Marx, who retires in terms of the Articles of Association, but is eligible, and offers himself for re-election.
- (3) To appoint Auditors for the current year, and to fix the remuneration for the past audit.
- (4) To transact any other business which, under the Articles of Association, may be transacted at an Ordinary General Meeting.

The Transfer Books will be closed from the 11th to the 26th May, 1916, both days inclusive.

By Order of the Board,

JOHANNESBURG CONSOLIDATED INVESTMENT COMPANY, LIMITED,  
*Secretaries.*

*per* FRANK HALL.

Head Office,  
Johannesburg,  
20th March, 1916.

## New Primrose Gold Mining Company, Limited.

(INCORPORATED IN THE TRANSVAAL.)

### NOTICE TO SHAREHOLDERS.

NOTICE IS HEREBY GIVEN that the Annual Ordinary General Meeting of Shareholders in the above Company will be held in the Board Room, Consolidated Building, corner of Fox and Harrison Streets, Johannesburg, on Friday, the 26th day of May, 1916, at 10.40 o'clock in the forenoon, for the purposes following:—

- (1) To receive and consider the Balance Sheet and Accounts for the year ended 31st December, 1915, together with the Reports of the Directors and Auditors.
- (2) To elect Directors in the place of Messrs. E. Brayshaw and S. B. Joel, who retire in terms of the Articles of Association, but are eligible, and offer themselves for re-election.
- (3) To appoint Auditors for the current year, and to fix the remuneration for the past audit.
- (4) To transact any other business which, under the Articles of Association, may be transacted at an Ordinary General Meeting.

The Transfer Books will be closed from the 11th to the 26th May, 1916, both days inclusive.

By Order of the Board,

JOHANNESBURG CONSOLIDATED INVESTMENT COMPANY, LIMITED,  
*Secretaries.*

per FRANK HALL

Head Office,  
Johannesburg,  
20th March, 1916.

## New Unified Main Reef Gold Mining Co., Ltd.

(INCORPORATED IN THE TRANSVAAL.)

### NOTICE TO SHAREHOLDERS.

NOTICE IS HEREBY GIVEN that the Eighteenth Ordinary General Meeting of Shareholders in the above Company will be held in the Board Room, Consolidated Building, corner of Fox and Harrison Streets, Johannesburg, on Friday, the 26th day of May, 1916, at 12.30 o'clock in the afternoon, for the purposes following:—

- (1) To receive and consider the Balance Sheet and Accounts for the year ended 31st December, 1915, together with the Reports of the Directors and Auditors.
- (2) To elect Directors in place of Messrs. G. Imroth and J. Muuro, who retire in terms of the Articles of Association, but are eligible, and offer themselves for re-election.
- (3) To appoint Auditors for the current year, and to fix the remuneration for the past audit.
- (4) To transact any other business which, under the Articles of Association, may be transacted at an Ordinary General Meeting.

The Transfer Books will be closed from the 11th to the 26th May, 1916, both days inclusive.

By Order of the Board,

JOHANNESBURG CONSOLIDATED INVESTMENT COMPANY, LIMITED,  
*Secretaries.*

per FRANK HALL

Head Office,  
Johannesburg,  
20th March, 1916.

## Van Ryn Deep, Limited.

(INCORPORATED IN THE TRANSVAAL.)

### NOTICE TO SHAREHOLDERS.

NOTICE IS HEREBY GIVEN that the Eleventh Ordinary General Meeting of Shareholders in the above Company will be held in the Board Room, Consolidated Building, corner of Fox and Harrison Streets, Johannesburg, on Friday, the 26th day of May, 1916, at 3.45 o'clock in the afternoon, for the purposes following:—

- (1) To receive and consider the Balance Sheet and Accounts for the year ended 31st December, 1915, together with the Reports of the Directors and Auditors.
- (2) To elect Directors in the place of Messrs. G. Imroth and C. Marx, who retire in terms of the Articles of Association, but are eligible, and offer themselves for re-election.
- (3) To appoint Auditors for the current year, and to fix the remuneration for the past audit.
- (4) To transact any other business which, under the Articles of Association, may be transacted at an Ordinary General Meeting.

The Transfer Books will be closed from the 11th to the 26th May, 1916, both days inclusive.

By Order of the Board,

JOHANNESBURG CONSOLIDATED INVESTMENT COMPANY, LIMITED,  
*Secretaries.*

per FRANK HALL

Head Office,  
Johannesburg,  
20th March, 1916.

## Witwatersrand Gold Mining Company, Limited.

(INCORPORATED IN THE TRANSVAAL.)

### NOTICE TO SHAREHOLDERS.

NOTICE IS HEREBY GIVEN that the Annual Ordinary General Meeting of Shareholders in the above Company will be held in the Board Room, Consolidated Building, corner of Fox and Harrison Streets, Johannesburg, on Friday, the 26th day of May, 1916, at 12 o'clock noon, for the purposes following:—

- (1) To receive and consider the Balance Sheet and Accounts for the year ended 31st December, 1915, together with the Reports of the Directors and Auditors.
- (2) To confirm the appointment of Mr. G. Imroth as a Director in the place of the late Sir George Farrar, Bart., D.S.O., and to elect Directors in the place of Messrs. J. Dale Lace and Henry Nourse, who retire in terms of the Articles of Association, but are eligible, and offer themselves for re-election.
- (3) To appoint Auditors for the current year, and to fix the remuneration for the past audit.
- (4) To transact any other business which, under the Articles of Association, may be transacted at an Ordinary General Meeting.

The Transfer Books will be closed from the 11th to the 26th May, 1916, both days inclusive.

By Order of the Board,

JOHANNESBURG CONSOLIDATED INVESTMENT COMPANY, LIMITED,  
*Secretaries*

per FRANK HALL

Head Office,  
Johannesburg,  
20th March, 1916.

# KNIGHT CENTRAL, LIMITED.

(Incorporated in the Transvaal.)

## REPORT OF THE DIRECTORS

For the Year ended 31st December, 1915.

Submitted at the Nineteenth Ordinary General Meeting of Shareholders, held in the Company's Board Room, Cullinan Building, Johannesburg, on Friday, the 12th May, 1916, at 11 a.m.

To the Shareholders,  
KNIGHT CENTRAL, LTD.

Gentlemen,

Your Directors beg to submit their Report for the year ended 31st December, 1915, together with the Reports of the Consulting Engineer and the Manager, and the Financial Statements made up to that date.

### PROPERTY.

There has been no change since the last General Meeting in your Company's property holding, which comprises 897 claims on the Farm Driefontein, equal in area to 895,3777 claims, besides two stands and a water-right.

### MINING OPERATIONS.

The Reports of the Consulting Engineer and the Manager deal fully with the work accomplished.

During the year 326,960 tons of ore were milled for a profit of £45,433, as compared with 284,960 tons during 1914 for a profit of £42,753.

The payable ore reserves at 31st December, 1915, amounted to 406,400 tons, with an average assay value of 5.8 dwts. over 62.4 inches, showing a decrease of 21,100 tons, with a slight improvement in value.

### FINANCIAL.

The Appropriation Account may be summarised in the following manner :—

Balance brought forward from 31st December, 1914	£126,839 15 2
Less—Audit Fees for 1914	210 0 0
	£126,629 15 2
Profits earned during 1915	15,433 6 10
Interest and Sundry Revenue	3,641 12 2
Dividends, etc.	778 4 11
	£176,485 19 1

Less—	
Capital Expenditure during 1915	£39,160 13 2
Contribution to Miners' Phthisis Compensation Fund	2,233 17 0
English Income Tax	202 16 8
	£41,597 6 10
Leaving a balance of	£134,888 12 3

Your Directors again passed the dividend last year, as they still considered it inadvisable to depart from the policy of maintaining a strong financial position, in view of the fact that up to nearly the end of the financial year the development accomplished South of the Dyke had continued to be disappointing. They are pleased, however, to report that since the close of the year the development South of the Dyke has exposed good values in the lowest level of the mine, and every endeavour will be made to push on development in this portion of your property.

The following items of Capital Expenditure have been incurred during the past year, namely :—

Buildings	£654 11 2
Machinery and Plant	7,665 6 3
Shafts	30,398 14 9
Investments	840 17 7
	£39,559 9 9
<i>Less</i> —Livestock, Vehicles and Harness, and Furniture written off	398 16 7
	£39,160 13 2

### STAFF.

Your acknowledgments are due to your Consulting Engineer, Mr. D. Wilkinson, and to your Manager, Mr. A. J. Jones, and his Staff, for the able and zealous manner in which they have carried out their duties during the past year.

### DIRECTORATE.

In accordance with the Company's Articles of Association all your Directors, viz., Messrs. W. H. Dawe, E. A. Wallers, R. R. Hollins, J. Jolly, A. G. Gill, F. R. Lynch and M. Honnet, retire from office, but, being eligible, they offer themselves for re-election.

### AUDITORS.

You will be asked to fix the Auditors' remuneration for their past services, and to appoint Auditors for the current year in place of Messrs. C. L. Anderson and Co. and Mr. Charles Stuart, who, being eligible, offer themselves for re-appointment.

We are, Gentlemen,

Obediently yours,

W. H. DAWE, Chairman.

S. M. NELSON,

C. J. MEINTJES,

H. W. ANDERSON,

G. W. HOLLINS,

F. R. LYNCH,

A. G. GILL,

Directors

Johannesburg,  
16th February, 1916.

## Knight Central, Limited.—continued.

## BALANCE SHEET, 31st DECEMBER, 1915.

Dr.	Cr.
To Capital—	
900,000 Shares of £1 sterling each, fully paid ..... . . . . .	£900,000 0 0
,, Share Premium Account—	
As per last Account ..... . . . . .	238,165 12 6
,, Funds Transferred from Appropriation Account—	
As per last Account ..... . . . . .	£157,462 4 1
For Capital Expenditure for year ended 31st December, 1915 ..... . . . . .	39,160 13 2
	<u>196,622 17 3</u>
	<u>£1,334,788 9 9</u>
,, Sundry Shareholders—	
Dividends unpaid ..... . . . . .	133 4 1
Sundry Creditors, etc. .... . . . . .	20,640 2 2
Development Suspense ..... . . . . .	1,500 0 0
,, Balance—	
Appropriation Account ..... . . . . .	134,888 12 3
Contingent Liabilities on Shares, etc.—	
Rand Mutual Assurance Co., Ltd.— 144 shares at £2 per share ..... . . . . .	£576 0 0
Witwatersrand Native Labour Association, Ltd.— 606 shares at 8s. per share ..... . . . . .	242 8 0
Witwatersrand Co-operative Smelting Works, Ltd.— 764 shares at 12s. per share ..... . . . . .	458 8 0
Native Recruiting Corporation, Ltd. Deposit of 10s. per native uncalled on complement of 2,689 natives	1,344 10 0
	<u>£2,621 6 0</u>
Note.—No provision has been made for the following:—Government Tax on profits for the year ended 31st December, 1915; Special War Levy; Income Tax, London.	
By Property—	
As per last Account ..... . . . . .	£295,954 17 9
,, Buildings ..... . . . . .	81,540 15 7
,, Machinery and Plant ..... . . . . .	401,535 16 3
,, Shafts—	
East ..... . . . . .	£167,233 0 9
West ..... . . . . .	141,017 19 7
Leading and Pump Stations ..... . . . . .	45,638 14 8
	<u>353,889 15 0</u>
,, Mine Development ..... . . . . .	193,079 12 9
,, General Surface Works and Dams	3,930 19 6
,, Livestock, Vehicles and Harness	426 19 7
,, Furniture ..... . . . . .	766 9 4
,, Investments—	
Victoria Falls and Transvaal Power Co., Ltd.— 8,500 Preference Shares of £1 each, fully paid, at cost ..... . . . . .	8,500 0 0
Rand Mutual Assurance Co., Ltd.— 144 shares of £10 sterling each, £6 paid up ..... . . . . .	864 0 0
Witwatersrand Native Labour Association, Ltd.— 606 shares of £1 sterling each, 12s. paid and 25s. per share deposit ..... . . . . .	1,121 2 0
Witwatersrand Co-operative Smelting Works, Ltd.— 764 shares of £1 sterling each, 8s. paid ..... . . . . .	305 12 0
Native Recruiting Corporation, Ltd. 28 shares of £1 each, £28; and deposit in respect of native complement, £1,344 10s. .... . . . .	1,372 10 0
	<u>12,163 4 0</u>
	<u>£1,343,288 9 9</u>
,, Beaver Share Warrants ..... . . . . .	422 11 0
,, Stores on Hand ..... . . . . .	29,259 13 0
,, Sundry Debtors, Payments in Advance, etc. .... . . . . .	6,024 10 7
,, Gold Consignment Account ..... . . . . .	18,963 11 9
,, Cash—	
Current Account, Johannesburg ..... . . . . .	1,228 16 7
Current Account, London ..... . . . . .	117 10 11
Dividend Accounts, Johannesburg and London ..... . . . . .	133 4 1
Fixed Deposit ..... . . . . .	90,300 0 0
Cash at Mine ..... . . . . .	2,212 0 7
	<u>93,991 12 2</u>
	<u>£1,491,950 8 3</u>

H. G. L. PANCHIAUD, Secretary.

To the Shareholders of the

KNIGHT CENTRAL, LTD.

We have audited the Balance Sheet of the Knight Central, Limited, dated the 31st December, 1915, above set forth, and have obtained all the information and explanations we have required. In our opinion such Balance Sheet is properly drawn up so as to exhibit a true and correct view of the Company's affairs to the best of our information and the explanations given us, and as shown by the Books of the Company.

W. H. DAWE, Chairman.

C. J. MEINTJES,  
H. W. ANDERSON,

Directors.

C. L. ANDERSSON & CO.,  
Incorporated Accountants (Eng.),CHAS. STUART,  
Chartered Accountant,

Auditors.

Johannesburg,  
23rd February, 1916.

Knight Central, Limited.—continued.

**Revenue and Expenditure Account for the Year ended 31st December, 1915.**

Dr.	Cr.
To Mining Expenses ... ... ...	£84,102 19 9
.. Handling Expenses ... ... ...	29,511 13 7
.. Development Expenses ... ...	35,951 2 0
.. Milling Expenses ... ... ...	25,322 3 1
Underground Tramming and Shovelling ... ... ...	41,911 19 8
.. Mine Pumping ... ... ...	10,571 4 8
.. Underground Administration ...	11,904 7 11
.. Surface Ore Transport, Crushing and Sorting ... ... ...	5,706 13 5
.. Cyaniding Expenses ... ... ...	20,995 17 4
.. General Mine Charges ... ...	23,996 11 8
	£290,064 13 1
.. Charges—	
Claim Licences ... ... ...	3,946 10 0
Salaries, Directors' and Consulting Engineer's Fees	5,800 0 0
Cables, Telegrams, Postages, Stationery, Printing, Advertising, Legal Expenses, Exchange, Commission, and General Charges ...	1,400 10 0
Profits Insurance ... ... ...	123 11 9
London and Paris Office Expenses (including London Committee Fees) ...	1,110 10 4
	12,381 2 1
.. Balance—	
To Appropriation Account ...	45,433 6 10
	£347,879 2 0

**Appropriation Account, 31st December, 1915.**

Dr.	Cr.
To Auditors' Fees—	
For year ended 31st Dec., 1914	£210 0 0
.. Expenditure on Capital Account—	
For Capital Expenditure during year ended 31st Dec., 1915 ...	39,160 13 2
.. Contribution to Miners' Pithisis Compensation Fund ...	2,233 17 0
.. Income Tax Paid in London ...	202 16 8
.. Balance—	
To Balance Sheet ...	131,888 12 3
	By Balance—
	Brought forward from 31st December, 1914 ... ... ...
	£126,839 15 2
	.. Balance—
	From Revenue and Expenditure Account, being profit on working for the year ended 31st December, 1915 ... ... ...
	45,433 6 10
	.. Interest and Sundry Revenue ...
	3,611 12 2
	.. Dividends, etc.—
	Received on Victoria Falls and Transvaal Power Co., Ltd., Preference shares to April 30, 1914 £639 8 11
	Received on Witwatersrand Co-operative Smelting Works, Ltd., shares ... ... ... £18 6 9
	Refund of unappropriated balance of profits 51 15 2
	73 1 11
	Received on Rand Mutual Assurance Co., Ltd., shares to 31st March, 1915 ... ... ... 29 12 0
	Interest in Reserve 36 2 1
	65 14 1
	£176,695 19 1
	£176,695 19 1

H. G. L. PANCHAUD, Secretary.

W. H. DAWE, Chairman.

C. J. MEINTJES,  
H. W. ANDERSON,

Directors.

Examined and found correct.

C. L. ANDERSSON & CO.,  
Incorporated Accountants (Eng.).CHAS. STUART,  
Chartered Accountant,  
Auditors.

# THIRTEEN BUTTERS' FILTER PLANTS

now operating on the Rand and giving complete satisfaction to everyone concerned.

Full particulars and operating data will be given on application.

50 lb. samples of slime will be tested free of charge to determine its filtering capacity. Estimates for plants, accompanied by complete general arrangement drawing, supplied on short notice. Write us for pamphlet regarding our process.

**CHAS. BUTTERS & CO., LTD.**

(Incorporated in England),

187, Exploration Building, Johannesburg.

P.O. Box 2652.

Telephone 3701.

Cable Address: "HUBNERITE."

**FRASER & CHALMERS, LTD., AGENTS FOR  
SOUTH AFRICA.**



GRANTULLY CASTLE 7,612 Tons.

ROYAL MAIL STEAMERS sail homewards from Durban at daybreak every Sunday, and from Capetown at 1 p.m. every Saturday, calling at Madeira.

MAURITIUS AND REUNION SERVICE.—Sailings at stated intervals.

THROUGH BOOKINGS are arranged to America and Continental ports.

OUTWARD PASSAGES of friends in the United

Kingdom and the Continents of Europe and America, may be prepaid in South Africa.

COMBINED LAND AND SEA TOURS.—In conjunction with the Railway Administrations in South Africa, the Company issues Combined Rail and Steamer Tickets for Circular Tours at REDUCED FARES. Tickets are available for six months, and the journey may be broken at any point.

For full particulars of Freight and Passage Money apply to the Agencies of the

**UNION-CASTLE MAIL STEAMSHIP COMPANY, LTD..**

AT CAPETOWN, PORT ELIZABETH, EAST LONDON, DURBAN, LOURENCO MARQUES, BEIRA AND JOHANNESBURG,  
OR TO THE SUB-AGENTS IN THE PRINCIPAL TOWNS.

*Union Castle  
Line.*

Sailings between SOUTH AFRICA and the UNITED KINGDOM by the Western Route, and by the Eastern Route (via Suez).

South African  
General  
Electric Co.,  
P.O. Box 1905,  
Phone No. 4321,  
JOHANNESBURG.



South African  
General  
Electric Co.,  
P.O. Box 1905,  
Phone No. 4321,  
JOHANNESBURG.

OL. XXV. PART II. NO. 1286. JOHANNESBURG, TRANSVAAL, SATURDAY, MAY 20, 1916.

[WEEKLY, PRICE 6D.]

## SOUTH AFRICAN GENERAL ELECTRIC Co.

# ELECTRIC STORAGE BATTERY LOCOMOTIVES

*Used by* —

CROWN MINES, Ltd.

E.R.P.M. G.M. Co., Ltd.

NEW KLEINFONTEIN G.M. Co., Ltd.

The Cheapest, Cleanest and Best Machines for Underground  
Haulage.

They are equipped with EDISON (indestructible) BATTERIES.

Write for Particulars—

**SOUTH AFRICAN GENERAL ELECTRIC CO.,**  
**JOHANNESBURG.**



